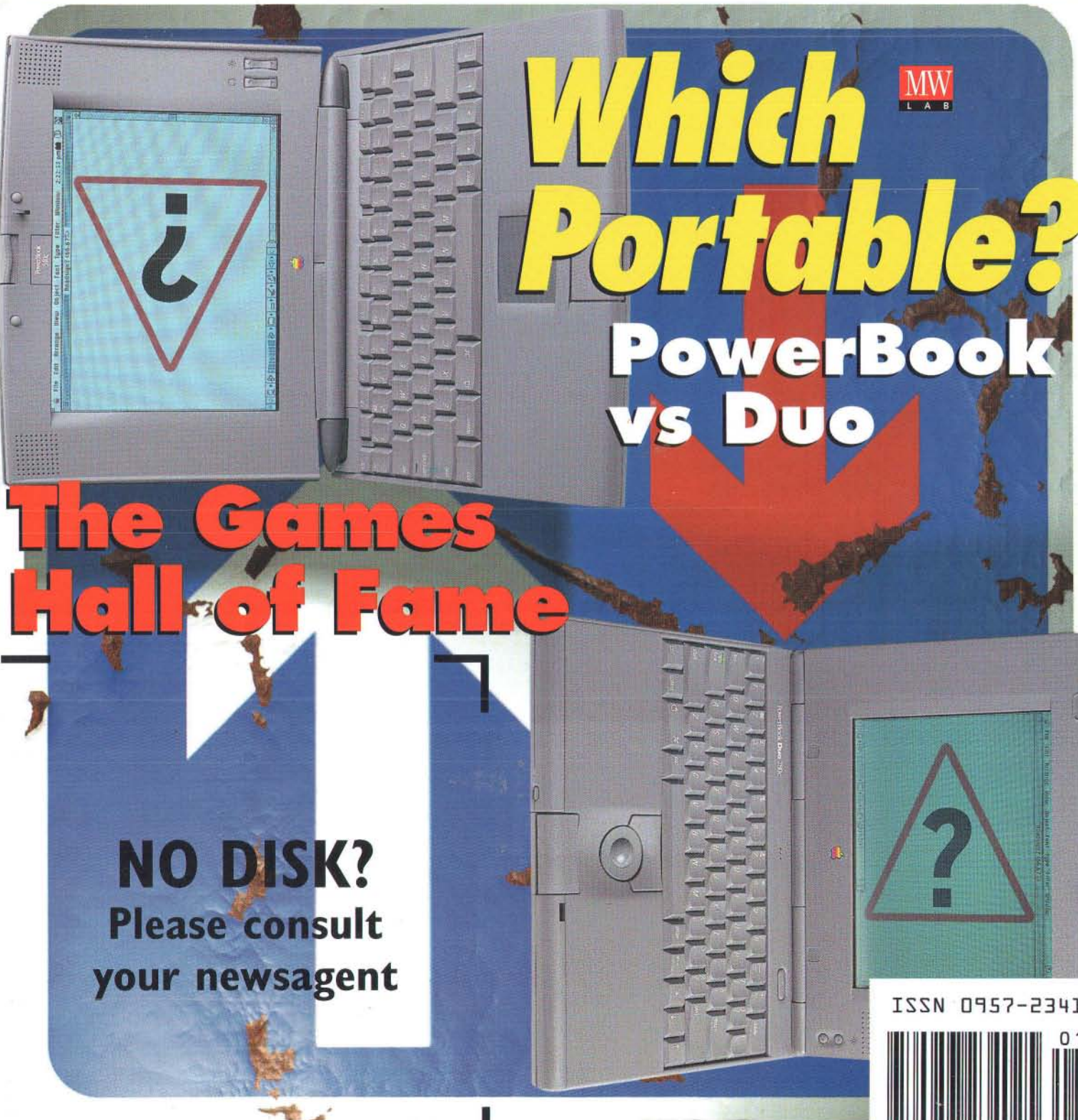
Macworld

THE WORLD'S FAVOURITE MACINTOSH MAGAZINE JANUARY 1995 £2.95



Which Portable?

MW LAB

PowerBook vs Duo

The Games Hall of Fame

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You bought a Mac. And then a few more. You tied them together. People started sharing.

Now they're sharing their frustration. With you. Time for a Workgroup Server.

That's the funny thing about the Apple™ Macintosh™ computer. With little fanfare and an idea known simply as 'plug and play', it turned a whole group of novice users into networked team players.

Is it any surprise? Just plug a connector into the back of a Macintosh and you're networked. You can share files, printers – virtually any computing resource.

For some users this is the only kind of 'peer-to-peer' networking they need. Others, however, find they need a Workgroup Server, dedicated to improving the productivity of their team or department.

So how do you know which is right for you? Just ask yourself some simple questions.

Do I have more than five networked computers? Has printing begun to slow down my Macintosh? Am I sharing more and more files with more and more people? Is that essential information locked up on someone else's Macintosh? Is there a danger of losing vital information? A 'yes' to any of these questions means it's time to consider an Apple Workgroup Server.

Apple Workgroup Servers provide the industry's easiest to manage centralised information store.*

Users can share files, ensuring they are available to just the right people at the right time. Without losing information or slowing systems down.

Apple Workgroup Servers also provide ways to share network applications and services, like accounting programs, databases, e-mail, calendars and more.

And that is just the beginning. With our integrated print spooling software users can free-up their Macintosh computers from printing jobs much faster, enabling real gains in productivity.

With Dantz Retrospect Remote® software† you can schedule automatic back-ups of both server and individuals' Macintosh desktop data across the network – automatically. Never has your information been so secure!

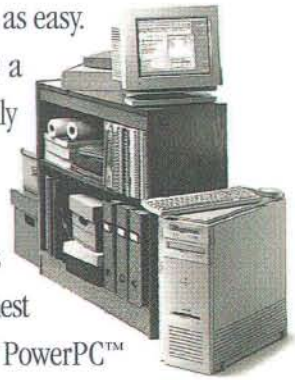
With FileWave®‡ software you can simplify the management of upgrading or installing new software. FileWave automatically checks the networked Macintosh systems, ensuring that key applications and documents are uniformly maintained at the correct version.

And using Apple Remote Access software from Apple, even mobile PowerBook™ users can be managed. Apple Remote Access allows users to exploit their network services from anywhere in the world – across any time zone – as if they were on their local network.

Viper Instant Access™§ is a high performance application for fast access to reference information such as telephone numbers, price lists, product and people details, without the overhead of a general database application.

Central administration ensures both consistency and guaranteed availability – at any time.

So how easy is an Apple Workgroup Server to use? As easy as a Macintosh. And choosing the right Apple Workgroup Server for your needs is just as easy.



We have a complete family of products, including our newest models based on highest performance PowerPC™ technology. If this hasn't convinced you then browsing through our Apple Workgroup Solutions Guide will undoubtedly reveal the perfect solution from the breadth of software and hardware available.

To get your hands on our Solutions Guide – and for the name of your nearest Apple Authorised Reseller – call 0800 234800 today. And get the power you need most from your workgroup environment.

Apple

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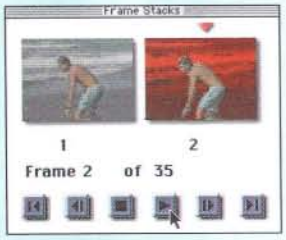

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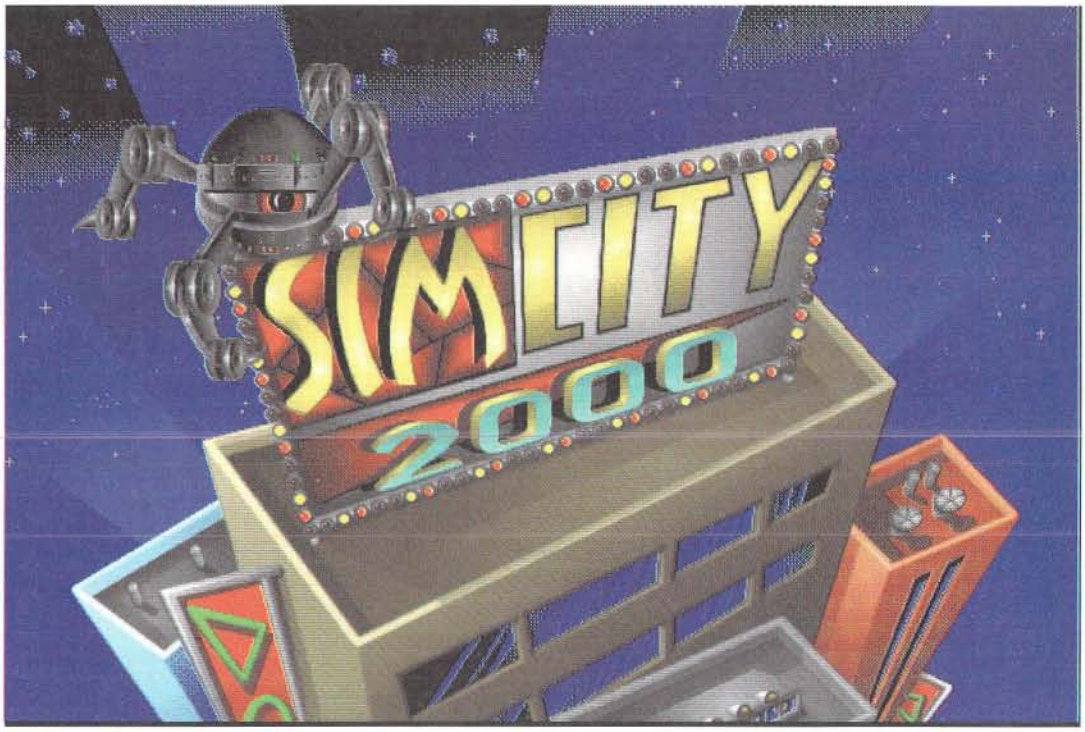
MAC SHOPPER SHOW

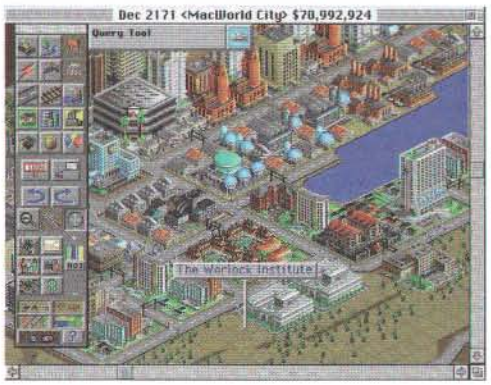
Macworld Cover Disk presents SimCity 2000



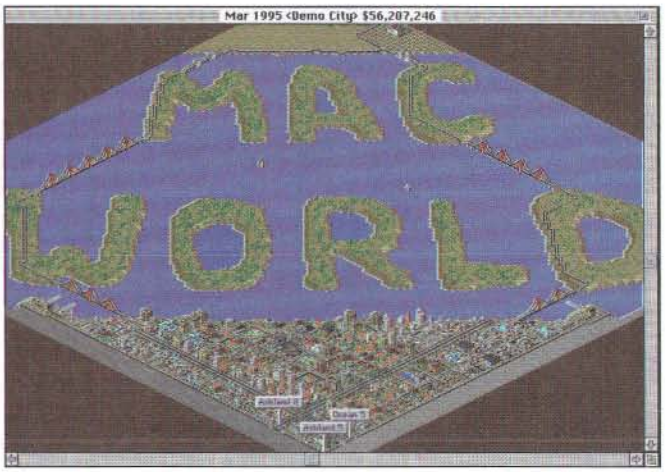
If you're one of the many addicts of SimCity, we've got a treat for you. If you've never played this fabulous game, you have an even bigger treat in store. On this month's cover disk we have a great demo of one of the year's best games – and two tricky scenarios for you to master.

SIM CITY 2000 is the game that puts you in control of your fellow man (and woman). Working from City Hall, you have the power to invest the hard-earned taxpayers' money wherever you see fit. Don't treat your civilians too badly, though, or you'll find them marching on City Hall. Look after your people, keep infrastructure investment up, and your people will do the rest – and fete your government.

Watch them, as you would a flea circus, going along their merry way, reacting to the circumstances, and your decisions.



Sim City 2000 requires you to manage industry and commerce, housing and health, education and crime. There's a budget to be balanced and disasters to be dealt with.



In this demo version, some of the advanced features are disabled, and the game will time out after you have played for 20 minutes. In that time, though, you can see how far you can progress with our scenarios – or you can try to build a new city of your own from scratch.

But watch out – it's one of the most addictive games yet created… Enjoy.

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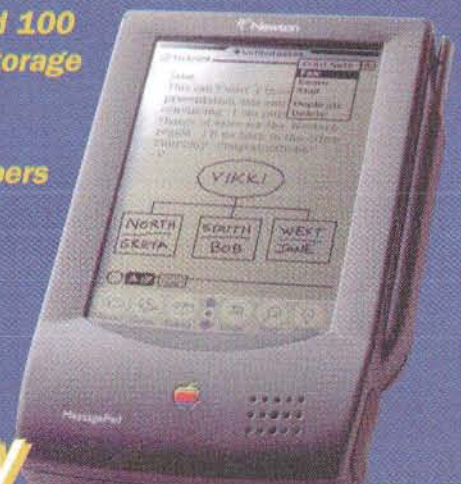

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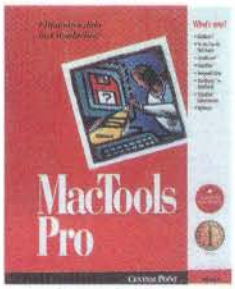

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- TV Tuner, Video In £1249

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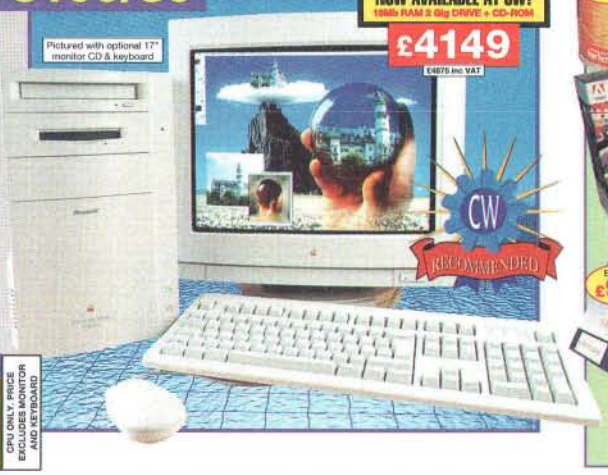

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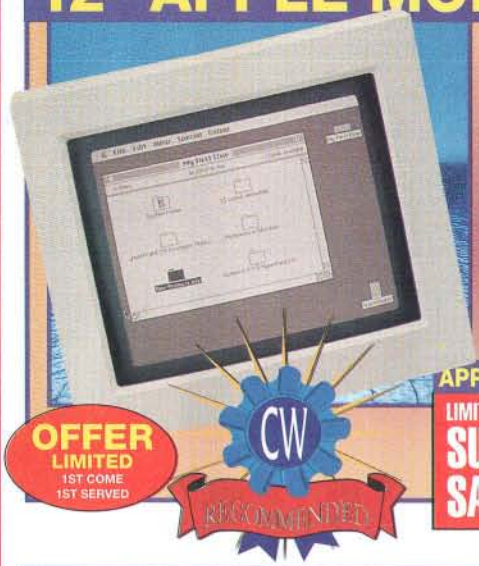

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If so then consider this genuine Apple 12" high-resolution display.
- 12" High-resolution Apple screen
- Superb for all text and grayscale use
- Sharp flicker-free screen operation
- Can display 256 greys (depending on card or VRAM installed in Macintosh)
- Ideal for WP & all non color works

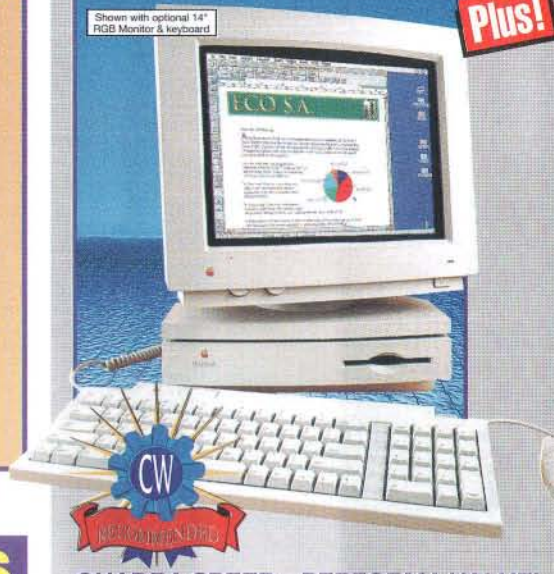
OFFER LIMITED 1ST COME 1ST SERVED

CW RECOMMENDED

APPLE 12" HI-RES MONO MONITOR
LIMITED SUPER SAVER £49
EXCLUDING VAT £56 including VAT

MACINTOSH 475

Plus!



CW RECOMMENDED

QUADRA SPEED - PERFORMA VALUE!

The entry level 68040 Mac & a real speed demon! Runs at a Quadra 700 matching 25Mhz and is ready to rip through CW's business, office dtp and edutainment tasks with gusto. In this strictly Limited Offer CW can offer this superb machine at near cost price!!
- 25Mhz Motorola 68040 processor (as fast as Quadra)
- 4Mb RAM (expandable to 36Mb) • 250Mb internal hard drive
- LC expansion slot • Colour support to 21"
- Desktop mouse & System 7
- **PLUS over £350* of software FREE!!**
- **HURRY! CW ONLY HAS LIMITED STOCKS AT THIS PRICE!!**

MAC 475 *PLUS* 4Mb RAM 250Mb DRIVE
PLUS OVER £350* OF FREE SOFTWARE
£599
Ex VAT £704 inc VAT
EX.VAT. DOES NOT INCLUDE KEYBOARD OR MONITOR

EXCELLENT VALUE DISPLAYS

AUDIOVISION 14"

TRINI + STEREO SPEAKERS
Excellent display and the ideal multimedia monitor!
- 14" Trinitron technology
- Built-in stereo speakers
- .28mm dot pitch
- Tilt & swivel base

APPLE AUDIOVISION 14" MONITOR
LIMITED SUPER SAVER £299
EX VAT £351 inc VAT

MULTI-SCAN 15"

WITH STEREO SPEAKERS
Great multi-scan 15" display
- 15" Multiscan Hitachi tube
- 3 resolutions
- Built-in stereo speakers & headphone jack
- Energy Star compliant

APPLE 15" MULTIPLE SCAN MONITOR
LIMITED SUPER SAVER £299
EX VAT £351 inc VAT

MULTI-SCAN 17"

BEST VALUE LARGE SCREEN
Trinitron quality and the great Apple brand
- 17" Multiscan
- Trinitron quality display
- Adjust. resolutions
- Zoom features with A3

APPLE 17" MULTIPLE SCAN MONITOR
LIMITED SUPER SAVER £699
EX VAT £826 inc VAT

MULTI-SCAN 20"

INCREDIBLE VALUE
A 'wrap up warm' special from The Warehouse.
- 20" Multiscan
- Sony Trinitron technology
- 0.28mm dot pitch
- Ideal for DTP & CAD work

APPLE 20" MULTIPLE SCAN MONITOR
LIMITED SUPER SAVER £1299
EX VAT £1525 inc VAT

SALE..SALE..SALE..SALE..SALE..SALE..SALE..SALE..SALE..SALE

YAMAHA SPEAKERS

Ideal for multimedia!
- Front mounted controls
- Excellent sound quality
- Yamaha branded
- Limited offer!

SPEAKERS POWERED YAMAHA YST-M10
£69
£81 inc VAT

APPLE 8:24 VIDEO CARD

Affordable 24-bit color
- 24-bit color on a 14" monitor!
- 12" NuBus - fits inside all 3 slot Macintoshes
- Limited offer!

24-bit VIDEO CARD APPLE 8:24
£99
£117 inc VAT

APPLE CD300+ CD-ROM

Tray loading CD from Apple
- Reads multi-session Photo CD's
- Connects directly to any SCSI Macintosh
- Double speed
- Excellent value

CD-ROM DRIVE APPLE CD-300 PLUS
£199
£234 inc VAT

APPLE CD-150 CD-ROM

CD-ROM at less than £100!!
- Reads Photo CD's
- Connects directly to any SCSI Macintosh
- Apple brand
- Slimline design

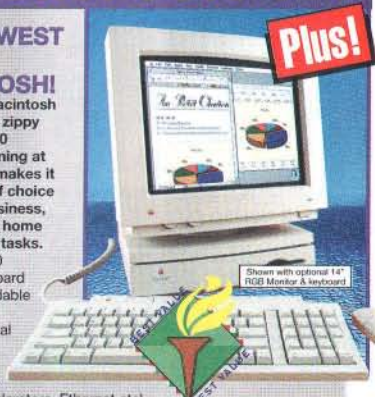
CD-ROM DRIVE APPLE CD-150
£99
£117 inc VAT

MACINTOSH 460

Plus!

OUR LOWEST PRICED MACINTOSH!

The superb Macintosh 460 features a zippy Motorola 68030 processor running at 33Mhz which makes it the machine of choice for general business, education and home entertainment tasks.



- 33Mhz 68030
- 4Mb of on-board RAM (expandable to 36Mb)
- 160Mb internal hard drive fitted
- LC expansion slot (for accelerators, Ethernet etc)
- Colour monitor support to 16" • Complete with System 7
- Desktop mouse
- Your low-cost entry into Macintosh computing!
- **PLUS over £250* of software FREE!**

MAC 460 *PLUS* 4Mb RAM 160Mb DRIVE
PLUS over £250* OF FREE SOFTWARE
£499
Ex VAT £586 inc VAT
EX.VAT. DOES NOT INCLUDE KEYBOARD OR MONITOR

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Our prices are quoted including AND excluding VAT to make your purchase decision easier. Computer Warehouse reserve the right to change specifications and prices at any time.

MASSES OF NEWTON SOFTWARE!

ECONOMIST	£40
TIME OUT	£49
FILE PAD	£99
QUICK FIGURE	£29
EXPENSE PLUS	£49
MONEY MAGAZINE	£29
FODOR'S 94	£39
MOBILE CALC	£39
COLUMBO'S MYST CAPERS	£29
FINGERTIP GOLF	£59

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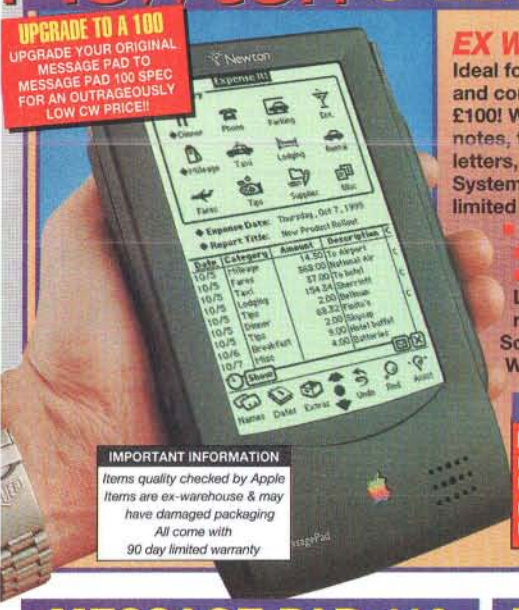
Authorised Reseller

"For on-the-move computing you just beat CW.

Newton® @ LESS THAN £100

UPGRADE TO A 100
UPGRADE YOUR ORIGINAL MESSAGE PAD TO MESSAGE PAD 100 SPEC FOR AN OUTRAGEOUSLY LOW CW PRICE!!



EX WAREHOUSE MESSAGE PADS

Ideal for anyone who needs to gather, organise and communicate information. And at LESS THAN £100! With Newton you can organise your life, take notes, turn doodles into drawings, format and print letters, - even send faxes. (Requires Comms System). Each unit comes complete with a 90 day limited warranty.

- Note Pad
- To-do List
- Names & Phonebook File
- PCMCIA slot
- Weighs only 1 pound.

Loads of Newton accessories in stock and ready to go from £14! Batteries, masses of Software, Connection Kits for Macintosh & Windows, Carry Cases, Cards & much more!

IMPORTANT INFORMATION
Items quality checked by Apple
Items are ex-warehouse & may have damaged packaging
All come with 90 day limited warranty

NEWTON MESSAGE PAD
LIMITED OFFER SUPER SAVER £99
EX WAREHOUSE STOCK. MAY HAVE DAMAGED PACKAGING

BEST VALUE POWER BOOKS

4/80 POWERBOOK 180 £999 WITH FOREIGN LANG. KEYBOARDS

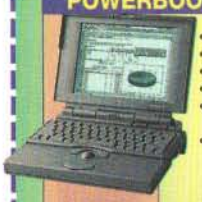
Better value than a PowerBook 150. - 180 has ADB ports, can run external monitor and has a much better screen!

- 33Mhz68030
- 4Mb, 80Mb Drive
- Desktop ADB ports
- SCSI interface
- Active Matrix display

CW has a limited number of 180s with foreign language keyboards. Apart from the legend on the keys they function exactly the same as the UK versions!

POWERBOOK 180 4MB RAM 80MB H.DRIVE
ONLY A FEW LEFT £1099 EX VAT £1291 inc VAT

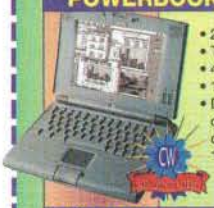
POWERBOOK 150



- 33Mhz 68030 processor
- 640 x 480 pixel grey screen
- SCSI interface
- 4Mb RAM memory
- 120Mb Drive
- **Free Claris Works**

POWERBOOK 150 4mb RAM 160Mb H. DRIVE
£939
£1103 inc VAT

POWERBOOK 520



- 25/50Mhz '040 • Ethernet
- Trackpad • Greyscale display
- 4Mb RAM - exp to 36Mb
- 160Mb drive
- Direct color out to 16"

POWERBOOK 520 4mb RAM 160Mb H. DRIVE
£1499
£1761 inc VAT

POWERBOOK 520C

- 25/50Mhz '040 • Ethernet
- New Trackpad
- Dual Scan 256 color display
- Direct color out to 16"
- PDS slot

POWERBOOK 520C 4mb RAM 160Mb H. DRIVE
£1939
£2278 inc VAT

POWERBOOK 540C

- 33/66Mhz '040 • Ethernet
- New Trackpad control
- Active Matrix color display
- 4Mb RAM • 320Mb drive
- Direct color out to 16"
- PDS slot
- **CW BEST**

POWERBOOK 540C 4mb RAM 320Mb H. DRIVE
£3199
£3759 inc VAT

MESSAGE PAD 110

Illustrated with optional Time Out software

NEW PRODUCT

NEW & BOXED WITH FULL 1 YEAR WARRANTY!

NEWTON MESSAGE PAD 110

More than 3 times the memory space and twice the battery space of the original. Can connect with your Apple Macintosh™ computer or Windows-based PC (with optional Newton Connection Kit)

- 20MHz ARM 610 processor
- 1MB RAM, 4MB ROM
- LocalTalk™ compatible
- Exchange data with Mac computer or PC
- Group 3 Fax compatible

NEWTON MESSAGE PAD 110
LIMITED SUPER SAVER £399 EX VAT £469 inc VAT

MESSAGE PAD 100

NEW & BOXED WITH FULL 1 YEAR WARRANTY!

MESSAGE PAD 100

New 'intelligent' companion to help organise your life! And now on an incredible pre-Christmas deal from CW!

- ARM 610 processor running at 20Mhz
- Large-screen reflective LCD display • 4Mb ROM
- 640K RAM
- Built-in LocalTalk port
- PCMCIA slot
- Infra-red transceiver

Hurry CW on has limited stocks of this super-deal!

SAVE £200 ON MESSAGE PAD 100!
WINTER SUPER SAVER £169 EX VAT £198 inc VAT

NEWTON ACCESSORIES

Leather Carry Case	For Message Pad & 100	£34
Leather Carry Case	For Message Pad 110	£44
Battery Pack Re-Charger	For Message Pad	£29
Re-Charger Cradle & AC Adaptor	For 110	£44
1MB Storage Card	For 110 & 100	£49
2MB Storage Card	For 110 & 100	£99
Connection Kit For Macintosh v1		£59
Connection Kit For Windows	110 & 100	£59
Ni-Cad Battery Pack	For Message Pad & 100	£14
Ni-Cad Battery Pack	For Message Pad 110	£19

COMMS SYSTEM

MESSAGE PAD + FAX-MODEM

This superb Computer Warehouse bundle gives you a Message Pad and Fax/Data modem all in one package. Send faxes, hook up to on-line services and communicate with business colleges and friends the world over!

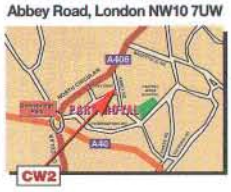
- Newton Message Pad
- Fax Fax/Data send and receive modem
- Ex Warehouse - May have damaged packaging
- Computer Warehouse recommended

NEWTON COMMUNICATIONS SYSTEM
WINTER SUPER SAVER £149 EX VAT £175 inc VAT

TWO SUPER CW STORES

COMPUTER WAREHOUSE 1
9 Hatton Street, London NW8 8PR

COMPUTER WAREHOUSE 2
708A The Tudor Estate, Abbey Road, London NW10 7UW



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CW buys big so you get the best deals available! You just can't get a better deal.

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"...and so is my dad!"

Authorised Education Reseller
Authorised Apple Workgroup Server Reseller
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Computer Warehouse is a division of TSC Ltd

Authorised Reseller

BARGAIN SOFTWARE!!

- Over 2000 editable EPS images + FREE fonts
- Place directly in DTP
- Or edit using Freehand or Illustrator

T-MAKER CLIP ART
2000 IMAGES + FONTS
£49

- V.fast and easy to use word processor
- Ideal for PowerBooks - uses v.little memory
- Imports from major WP and DTP applications

WRITE NOW v4
WORD PROCESSOR
£29

SAVE

SAVE!!

QUARK XPRESS 3.3 MACINTOSH & NATIVE

QUARK XPRESS v3.3 MACINTOSH
LIMITED SUPER SAVER **£549** EX VAT £645 inc VAT

QUARK XPRESS v3.3 POWER MACINTOSH
NOW FOR POWER MAC! **£649** EX VAT £763 inc VAT

ADOBE PHOTOSHOP

FREE UPGRADE v.3

2.51 + FREE v3 UPGRADE
Version 3 now includes:
- Layers for easier montaging
- New Lighting Effects
- Sponge tool for saturation control

PHOTOSHOP v2.51 + FREE UPGRADE **£399** £469 inc VAT

THE BEST DATABASE

Best value relational database
- 10 simultaneous related files
- Automatic data entry/check
- Easy to use macros
- FREE 10 ready to use databases

4D FIRST NATIVE FOR POWER MAC **£99** £117 inc VAT

WORD PERFECT + FILEMAKER

2 great packages for £200!!
- Word Perfect - powerful word processing
- Filemaker Pro - best selling database
- Limited Offer, Call CW NOW!!

INTEGRATION W. PERFECT + F.MAKER **£199** £234 inc VAT

ADOBE ILLUSTRATOR

APPLE MACINTOSH 5.5 INCLUDES PPC VERSION

The postscript drawing package of choice.
- Plug-in technology
- New trapping features
- Excellent text handling
- Superb Filters for special FX
- **FREE** 220 fonts and Adobe Acrobat

ILLUSTRATOR FOR MAC OR P.MAC **£279** £328 inc VAT

"You Just Can't Argue With These Prices!"

24Bit COLOR SCANNER!

FREE PHOTOSHOP LE + ON-SITE WARRANTY

CW RECOMMENDED

SCANMAKER II

How about a 300 dpi 24bit color scanner complete with Adobe Photoshop LE AND FREE 1 year On Site Warranty for less than £400!! With the Microtek Scanmaker II you can capture glorious 24-bit color images and 8-bit greyscale images. And it doesn't stop there. The Scanmaker II is also perfect for scanning line art - up to an enhanced 1200dpi resolution.

- 24-bit color scanning (16.7m colors)
- 8-bit color scanning (256 greys)
- 300 x 600dpi optical resolution
- Up to an enhanced 1200dpi line art
- Free Adobe Photoshop LE
- Free 1 year on-site warranty

With a Scanmaker II and Photoshop LE you're ready to use color, mono and line art in your publications from day 1

SCANMAKER II + PHOTOSHOP LE + ON-SITE
£399 EX VAT £469 inc VAT

Minimum packing supplied.

MORE CW RECOMMENDED SCANNERS

Best quality and superb value 30-bit fast scanner
- 565 x 1200 optical res.
- 2400dpi enhanced res.
- Very fast: A4 col < 30secs
- Optional tranny adaptor

EXCELLENT NEW NIKON SCANTOUCH
FREE LE PHOTOSHOP **£899** EX VAT £1056 inc VAT

Mac User 'Best Buy'. FREE FotoTune Lite!
- 400 x 800dpi optical res
- 2400dpi enhanced res
- 30-bit color operation
- Optional tranny hood

THE HIGH VALUE AGFA STUDIOSCAN II
FREE LE PHOTOSHOP **£679** EX VAT £798 inc VAT

High-end slide scanner for professional publishing
- 2700dpi optical res
- A 35mm to A4 @ 150#
- Scans positive or negative
- Ideal for catalogue work

NIKON COOLSCAN 35mm SLIDE SCANNER
WITH CW SAVE £££'s **£1499** EX VAT £1761 inc VAT

Quality and speed from Epson yet again
- 600 x 1200dpi optical res
- 2400dpi enhanced res
- 30-bit color operation
- **FREE OmniPage Direct**

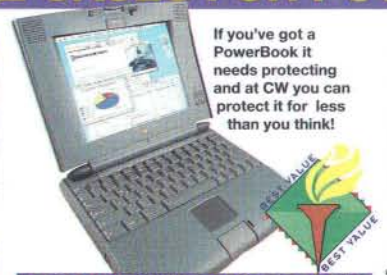
THE NEW FAST, 30-BIT EPSON GT9000
FREE LE PHOTOSHOP **£879** EX VAT £1033 inc VAT

HIGH-VALUE CASES FOR POWERBOOKS

POWERBOOK DELUX CASE

DELUX CASE FOR POWERBOOKS **£19.95**

CW's super-value, lowest cost padded case.
- Detachable strap
- Fully padded
- Carrying handle
- External pocket
- Zipper fastening
- Black finish
- Less than £20!!



If you've got a PowerBook it needs protecting and at CW you can protect it for less than you think!

P/BOOK PREMIER CASE

PREMIER CASE FOR POWERBOOKS **£29.95**

Extra padding, extra pockets, carrying handle and detachable strap. One of CW's Best Sellers!!
- Heavy-duty simulated leather
- Fully padded
- Capacity 25Kg

CASES FOR POWERBOOKS FROM ONLY
ANOTHER CW SUPER SAVER **£19.95** EX VAT £23.46 inc VAT

CW FOLIO PAC 4 CASE

CW FOLIO PAC 4 FOR POWERBOOKS **£39.95**

Dual compartment, holders for pens, pockets for disks and a quality finish.
- Fully padded
- Detachable strap
- Durable construction with handle
- Capacity 25Kg

CW DOUBLE DELUX CASE

DOUBLE DELUX FOR POWERBOOKS **£49.95**

The ultimate cw protection for your PowerBook!
- Dual compartment
- Detachable strap
- Metal re-enforced carrying handle
- Pockets galore

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Yep! The two best Macintosh stores are ready to greet you with bargains galore!

CW'S PRICING POLICY

CW's prices are constantly checked to make sure you're getting the best possible deal and are quoted including AND excluding VAT to make your purchase decision easier. Prices are correct and stock available at time of press (E&OE). However, all offers are limited and subject to availability. Computer Warehouse reserve the right to change specifications and prices at any time.

ALL OFFERS STRICTLY LIMITED AND SUBJECT TO AVAILABILITY

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Authorised Reseller

"These top printers really are a hoot - and at these great prices I save my loot"

The Nation's Favourite Warehouse!

COLOR STYLEWRITER PRO

NEW APPLE COLOUR PRINTER

Excellent CW quality CMYK A4 colour printer with 360dpi resolution and fast 1/2 page per min printing (colour).

- ColorSync™ color-matching technology
- 4 separate ink cartridges - CMYK
- Tray holds up to 100 sheets of paper and 15 envelopes
- A real performer - ideal for visuals, presentations and general color work.

Monotype FunFonts is packed with display, picture & dingbat fonts. Your documents will never look better!!

FREE FUN FONTS WITH THIS PRINTER WORTH £49!

APPLE COLOR STYLEWRITER PRO

PLUS FREE FUN FONTS **£399** EX VAT £469 inc VAT

APPLE STYLEWRITER II

RECOMMENDED BUDGET PRINTER. SUPERB INKJET PRINTER FOR LESS THAN £200!

Advanced inkjet technology delivers 'laser-like' printing at 360dpi and 2 pages per minute. Plus with Grayshare software (included) you get improved graphics!!

- 360dpi ink-jet engine for superb quality
- Prints to plain paper or envelopes
- 39 Apple TrueType fonts
- Free MonoType FunFonts!

Monotype FunFonts is packed with display, picture & dingbat fonts. Your documents will never look better!!

FREE FUN FONTS WITH THIS PRINTER WORTH £49!

CW PRODUCT CHECKLIST

- 360dpi 'laser-like' quality
- 2 pages per minute
- Plain paper or envelopes
- Grayshare printing
- FREE Monotype FunFonts

APPLE STYLEWRITER II + FREE FONTS!!

PLUS FREE FUN FONTS **£199** EX VAT £234 inc VAT

GCC TECHNOLOGIES ELITE 8

TWIN BIN VERSION
BLP ELITE 8 AS PICYURE WITH TWO PAPER BINS
£599.00

SUPERB VALUE FROM GCC!

If it's value for money you want then look no further! The CW selected GCC Technologies Elite 8 features Postscript compatible printing, built-in AppleTalk networking, super edge-to-edge A4 printing, speedy 16.67 Mhz processor and a superb 8ppm (pages per minute) operation! For added flexibility a 2nd paper tray can be added (as shown) for a surprisingly low (£99) cost.

- 300dpi Postscript printing
- AppleTalk networking
- On-board SCSI port
- Edge-to-edge A4 printing
- Expandable RAM memory
- 17 resident Postscript fonts

300dpi, 8PPM, POSTSCRIPT GCC ELITE 8

LIMITED SUPER SAVER **£499** EX VAT £586 inc VAT

COLOR STYLEWRITER 2400

Great new color inkjet 360dpi printer that utlises new fast drying inks to give superb color output on a variety of papewr stocks! See it a CW NOW!

- Fast-drying inks. - Easy to print color transparencies, because the ink is dry when the transparency leaves the printer. • Water-resistant ink. - remain legible if they get wet.
- 64 TrueType fonts included FREE
- LocalTalk option available

APPLE COLOR STYLEWRITER 2400

PLUS FREE FUN FONTS **£399** EX VAT £469 inc VAT

LASERWRITER 300 PERSONAL

CW PRODUCT CHECKLIST

- Genuine Apple laser
- 300dpi quality
- Built-in Greyshare software
- 39 TrueType fonts
- EPA Engery Star Compiant
- FREE Monotype Fonts - a £49 value!

GENUINE APPLE LASER FOR LESS THAN £400!!

The Apple Personal LaserWriter 300 brings you laser quality printing for the price of an inkjet, making it ideal for both office and home use. The compact all-in-one design fits right onto your desk and at this super-low CW price, fits right into your budget. 300dpi quality, 39 scalable fonts, built-in GrayShare software and Energy Star Compliant - it's got it all!

- 4 page per minute operation
- 300 dots per inch; Greyshare
- 512K RAM (Operates as though 2Mb of RAM)
- Network capability through Greyshare software

And at LESS than £400! it's a CW BARGAIN! Plus - for a limited time only CW is giving away Monotype Fun Fonts worth £49 with this superb 'one to three user' printer!!

FUN FONTS GIVES YOU ALL THIS

Amasis
Amasis
Amasis
Amasis
Bembo Extra Bold
Blab
Harendon
ELIX TITLING
Figaro
Gill Sans Ult Bold Cond
Old English Text

PLUS MORE!

FREE FUN FONTS WITH THIS PRINTER WORTH £49!

PERSONAL LASERWRITER 300 + FREE FONTS

WITH CW SAVE £££'s 300DPI OUR BEST VALUE LASER! **£399** EX VAT £469 inc VAT

LASERWRITER PRO 630

600DPI APPLE LASER WITH ETHERNET FOR UNDER £1200!!

Best value network printer!! 600dpi network laser with Postscript Level 2, PhotoGrade & FinePrint technologies. Best suited to workgroups of 7 to 10 users this high-speed printer is the best value yet!

- 600dpi Apple quality laserprinter
- Postscript Level 2
- Ethernet networking as standard
- PhotoGrade for printing greyscale pictures & graphics
- FinePrint for enhanced text
- 8 page per minute operation
- Motorola 25Mhz 68030 processor
- 8Mb RAM (expandable to 32Mb)
- 64 scalable TrueType & Postscript fonts included FREE
- SCSI port for font hard drive
- Prints to Paper, envelopes, transparencies
- **Add a 500 sheet feeder with tray & cassette, plus a 2nd universal cassette AND an envelope cassette for only £99!!**

AT CW ADD AN ENVELOPE FEEDER SHEET FEEDER
PLUS XTRA UNIVERSAL CASSETTE
£99 £117 inc VAT

600DPI ETHERNET LASERWRITER PRO 630

WITH CW SAVE £££'s **£1199** EX VAT £1409 inc VAT

LOWEST PRICES!
CW buys big so you get the best deals available! You just can't get a better deal.

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Gordon Harwood is the only Apple Authorised Reseller to give *YOU* all the choices, with our new... PRICE BUSTING MACPACS!

Just 'MIX 'n' MAC' it's A B Ceasy!

"With A Multi Million Pound Turnover we buy HUGE...to give YOU MONSTER SAVINGS! Remember with a GH MacPac YOU get to CHOOSE just what you pay, by getting just what you want, in your own... BARGAIN BUNDLE!

Step 'A' Pick the CPU that's just right for your needs. If you need help, just call!

Step 'B' Choose a Monitor with the display area to fit your work size, and also your pocket.

Step 'C' Select your keyboard, safe in the knowledge that it's a genuine Apple one!

ENTRY LEVEL MACS

Macintosh Performa 460's and 475's

Performa 475 shown with optional Apple Extended Keyboard & Apple 14" Trinitron Colour Monitor

New Product

NEW ENTRY LEVEL PERFORMA PRICES FROM GH - EVEN BETTER VALUE!!!

Performa 460 CPU - 4/160
Only... £499 (£587 Inc. VAT)
THE IDEAL STARTER MAC

See our MacPac Monitors, Keyboards & Extras

LOOK HERE! WE'VE GOT MACS AT UNDER £500!!!

Performa 460 with Claris Works 2.1 FREE!	4/160	£499 (£587)
NEW Performa 475 with Claris Works 2.1 FREE!	4/250	£589 (£693)
NEW Performa 475 with Claris Works 2.1 FREE!	8/250	£699 (£822)

Special pre loaded software complete with Intro Documents

MACINTOSH PERFORMA 460
GH entry level Macs for business, home or education. With 33MHz 68030 CPU's, 4Mb RAM and 160Mb Hard Disk Drives. You can then choose a colour monitor up to 17" as you require plus the keyboard you prefer. Perfect Starter!

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Quadra performance with FAST 25MHz 68040 CPU's. These Macs will dash through your workload QUICKLY! You can use monitors up to 20" for LARGER work areas.

FREE FROM GH...
Claris Works software suite with all GH Performa 460/475 CPU's *(see full details in chart on the right)*

PLUS... Every GH Performa 460/475 is now supplied with System Software, PC Exchange, At Ease and Informational Tutorials

These are CPU prices -don't forget your keyboard & monitor

030-ish

Macintosh LC 630 & Performa 630

LC 630 shown with optional Apple Design Keyboard & Apple 15" Multiple Scan Colour Monitor

NEW LC and Performa 630 full 68040 Replacement CPU with FPU Only... £295 (£347)

Every GH Performa 630 is now supplied with PC Exchange, At Ease &Informational Tutorials

MACINTOSH LC & PERFORMA 630's
Ideal Multi Media Macs that boast 66/33MHz 68LC040 CPU's. With the 'Video in TV (tuner)' model, you can input from VCR's and cut & paste between the two, plus... see TV on your Mac screen! A further option to output to VCR or Large TV's is also available. Standard 16 Bit Stereo Sound technology

Performa 630 - 4/250
Only... £749 (£880 Inc. VAT)
MULTIMEDIA MAGIC!

See our MacPac Monitors, Keyboards & Extras

Performa 630 with Claris Works 2.1 FREE!	4/250	£749 (£880)
Performa 630 with Claris Works 2.1 FREE!	8/250CD	£969 (£1139)
Performa 630 Inc. NEW 'Video in TV' facility!	8/350CD	£1149 (£1350)
Macintosh LC 630 -Whilst Stocks Last-	8/250	£675 (£794)
Macintosh LC 630 -Whilst Stocks Last-	8/350CD	£869 (£1022)
NEW Quadra 630 (68040+FPU inc. New System 7.5)	4/250	£816 (£959)

These are CPU prices -don't forget your keyboard & monitor

Special pre loaded software complete with Intro Documents

FREE FROM GORDON HARWOOD...
Claris Works 2.1 software with all Performa 630 CPU's. A suite of applications including Word Processor, Database, Spreadsheet, Draw, COMMS and Graphing!

EVEN GREATER LC & PERFORMA 630 SAVINGS WITH THESE GH PRE-CONFIGURED BUNDLES...
Packs inc. a NEW Apple 15" Multiple Scan Monitor & Design Keyboard - Performa 630's also inc.Claris Works 2.1!

Performa 630 4/250 CPU	Performa 630 8/250 CD CPU	Performa 630 8/350 TVCD CPU
inc. 15" Monitor & Design Keyboard	inc. 15" Monitor & Design Keyboard	inc. 15" Monitor & Design Keyboard
SCOOP PRICE... £1079 (£1268 Inc. VAT)	SCOOP PRICE... £1249 (£1468 Inc. VAT)	SCOOP PRICE... £1425 (£1675 Inc. VAT)

LC 630 8/250 inc. 15" Monitor & Design Keyboard £1119 (£1315 Inc. VAT)

SUPER LOW PRICE Whilst Stocks Last!

LC 630 8/350 CD inc. 15" Monitor & Design KB £1259 (£1480 Inc. VAT)

PowerPC

Power Macintosh - 6100/60, 7100/66, 8100/80

PowerMac 6100/60 shown with optional Apple Extended Keyboard and Apple 14" Colour Audio Vision Monitor

SAVE UP TO... £200 WHEN YOU PURCHASE A SELECTED MONITOR WITH ANY POWER MAC (see monitor chart below and phone for details of these even greater savings)

NEW PowerMac AV Display Card inc. 2Mb VRAM Only... £374 (£440)

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AT THE BEST PRICES AROUND!

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8100/80	8/500	£2999 (£3524)
8100/80	16/500CD	£3249 (3818)
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8100/80	16/1000CD	£3499 (£4112)
8100/110	8/2000	£4095 (£4812)

These are CPU prices -don't forget your keyboard & monitor

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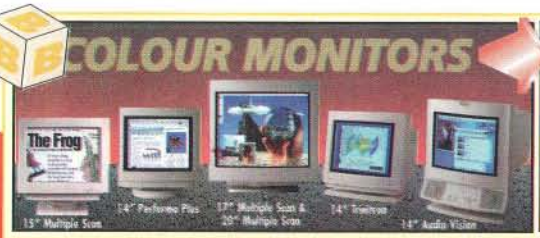
COLOUR MONITORS



15" Multiple Scan · 14" Performa Plus · 17" Multiple Scan & 20" Multiple Scan · 14" Trinitron · 14" Audio Vision

Apple Colour Monitors
Genuine Apple Monitors from only... £155 (£183 Inc. VAT)

MONITOR PRICES	Bought with CPU	Purchased Alone	Performa 460 or Power Mac
14" Performa Plus (.28)	£155 (£183)	£189 (£223)	-
14" Trinitron (.26)	£249 (£293)	£265 (£312)	from £165
14" Audio Vision (.26)	£330 (£388)	£344 (£405)	-
15" Multiple Scan (.28)	£289 (£340)	£305 (£359)	-
17" Multiple Scan (.25)	£699 (£822)	£739 (£869)	from £539
20" Multiple Scan (.26)	£1459 (£1715)	£1499 (£1762)	from £1299

Just pick a monitor that connects to your CPU. You may be able to add more Video RAM (VRAM) to increase maximum colours displayed.
LC II/Performa 450 - Performa 475 - Performa 630 - PowerMac 6100 - 7100 - 8100
17" · 20" · 17" · 17" 20" 20"

"Don't forget when you buy a monitor WITH your Mac CPU... GH give you a generous reduction on the price of your chosen monitor!" (see chart left)

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Design	£79	(£93)
Extended	£139	(£165)
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GH have secured stocks of this exciting revolutionary NEW HIGH QUALITY INKJET PRINTER! Boasting an incredible 720dpi resolution max. output, the Stylus 800 is unique! Take a look at recent magazine reviews to the glowing reports for this printer! If you need the ultimate low cost inkjet proofing device - This is the one for you!

(Apple printer driver software is due for release very soon)!

Epson Stylus Colour

Excellent and Truly Unique Budget Inkjet 720dpi Printer

ONLY... **£385** (£453 Inc. VAT)

INCLUDES SHEET FEEDER

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Fantastic Colour Print, ideal for proofs etc. 360dpi
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NEW APPLE STYLEWRITER 2400 COLOUR PRINTER
Excellent Colour Print, ideal for proofs etc. 360dpi
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APPLE PERSONAL LASERWRITER 300
Genuine 300dpi Apple Laser Printer

LaserWriter 300

Apple Quality Laser Printing at a Remarkably Low Price

£445 (£523 Inc. VAT)

APPLE STYLEWRITER II
Mono 360dpi Inkjet Printer for budget priced laser like quality output

StyleWriter II

Apple Quality at a Budget Price for Super Mono Printing

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NEW... HP DESKWRITER 320 INKJET PRINTER
Great 600 x 300dpi Budget Mono (Colour kit available)

HP DeskWriter 320

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GTX 8000 Omnipage & Photshop LE	£739 (£869)
GTi 8000 FULL Photoshop	£895 (£1052)
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PowerBook 540 12/240 with Mobility Last Few -Modem	£2499 (£2937)
PowerBook 540c 4/320 with Mobility Bundle	£3049 (£3583)
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PowerBook Duo 280 4/200 with Mobility Bundle	£1749 (£2056)
PowerBook Duo 280 12/200 with Mobility Bundle -Modem	£2099 (£2467)
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Just plug in for an excellent sound boost to your Mac

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- High Quality Mouse Mat
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FREE CABLE WITH ALL PRINTERS

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LaserWriter Select 360 A4, 600dpi, 10ppm, PostScript 2	£1249 (£1468)
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Recharger & Battery	£39 (£46)
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MAC ▼	PC ▼
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MF-8421 21" 1600x1280	£1249
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4E IPM 15" 0.28mm 1024x768	£379
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1225S	1.2GB	10ms	£POA

Quantum

IBM

45G9466	9ms	1.0Gb	£525
86F0102	9ms	2.0Gb	£699
90F0780	10ms	4.0Gb	£1645

DEC

DSP3210	2.1Gb	10ms	£995
DSP5350	3.5Gb	12ms	£1545

digital

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MIC2217av	11ms	1.7Gb	£575
MIC2217	10ms	1.7Gb	£575
MIC1936	11ms	3.1Gb	£975
MIC3243	8.5ms	4.3Gb	£1449
MIC1991	12ms	9.3Gb	£2200

MICROPOLIS

MEMORY
LC475/QUADRA, CENTRIS,POWERMACS

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16MB	£345
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SCANNER

EPSON GT 9000

Create your own magic, just like that! Need to scan a 5"x4" transparencey (over 20Mb of data) at 600dpi quickly? In a dazzling 16.7 million colours? No problem!! Just press the button and hey presto, a crisp, colour accurate image materialises, jaggies free, in just 78 seconds! Epson's new 30bit technology (GT9000 Range) ensures superb gradation control and a significant reduction in moire. Equally wizard in mono, the single pass GT-9000 works its black magic to produce smooth greyscales and crispline.

MICROTEK

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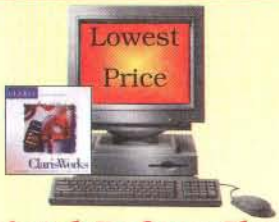

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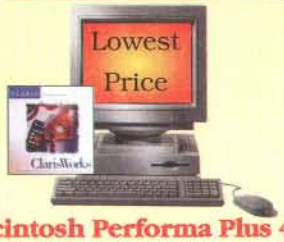

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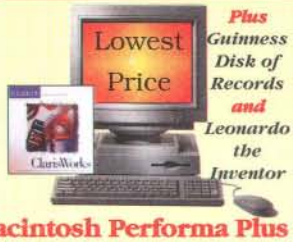

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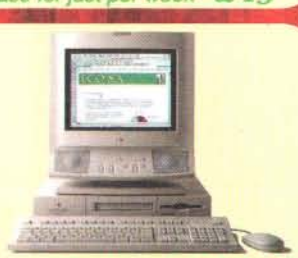

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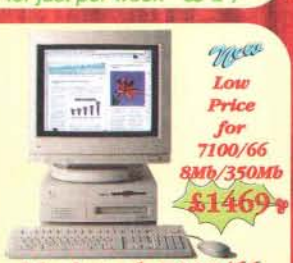

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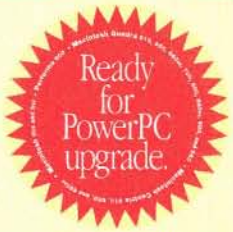

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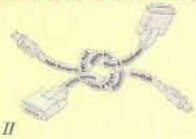

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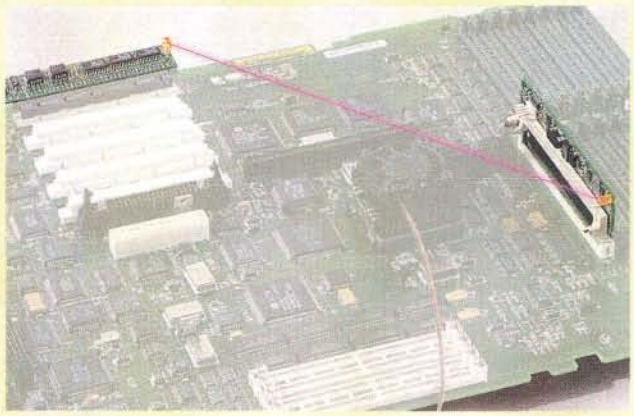


Shown here are the two pieces of Newer Technology's Power Pump accelerator installed on a Quadra 950 motherboard. The Clock Driver Card (in the ROM socket) carries the oscillator chip, which accelerates the CPU. Note that the illustration does not show the Apple Upgrade card.

Pump it up! Accelerator takes Macs to the max

So you opted for an Apple 601 Power Mac upgrade card for your Quadra, but the new 110MHz Power Macintosh 8100/110 is making you drool while you stumble along at a measly 50MHz or 66MHz? Here's the good news: Newer Technology has announced the Power Pump, a hardware package that accelerates both the 68040 processor on the Quadra 700, 900, or 950 motherboard and the PowerPC 601 chip on Apple's upgrade card.

The Power Pump's Controller Card resides in the NuBus slot partially blocked by the Apple upgrade card, while the Clock Driver Card sits in the ROM socket. The Controller Card receives the speed setting from the Power Pump control panel, and the CPU setting (PowerPC or 680X0) from Apple's PowerPC Upgrade Card control panel. Via an infrared beam, the Controller Card sends the speeed and CPU setting to the Clock Driver Card, where it is stored in nonvolatile memory for the next restart.

The Power Pump control-panel software can independently adjust the speed of the 68040 and PPC 601 chips. The Pump can accelerate 25MHz 040 chips to 30MHz, 33MHz chips to 40MHz, and any PowerPC 601 chip to 70MHz to 80MHz. Readers should note that these specs are the manufacturer's estimates – individual chips' tolerance for acceleration varies.

The package should cost around $350, and is expected to be available by the time you read this. Contact Newer Technology direct on 0101 316 685 4904. – Cameron Crotty

New machines for 1995 see

Two PCI to carry

Apple is pinning its hopes for corporate acceptance, and a new drive into graphics-intensive applications, on two models of Power Macintosh using the Peripheral Component Interconnect (PCI) bus technology.

According to reports from the US, one will be the linchpin of Apple's corporate strategy and could end up being sold by IBM to the Fortune 200. The second will have dedicated add-on hardware that will give graphics capability to match that of Silicon Graphics' Indigo Unix workstation.

The first system, code-named Tsunami and scheduled to ship in the spring, is being designed by Apple to showcase the benefits of both the PowerPC and the Mac operating system by incorporating a number of revolutionary design features.

Due to its modularity, the system could also be a precursor of Power Macs that can run both the next version of the MacOS – currently known as Copland, but expected to be dubbed System 8 by the time it ships – and IBM's OS/2 for the PowerPC, sources said.

The system is already designed to be highly modular, with Apple intending to let users upgrade the CPU, graphics accelerator, and even the PCI bus.

With a little work Apple could make the system capable of running future versions of IBM's OS/2 for the PowerPC, some sources said. Whether Apple will do that probably depends on whether the two companies can come to terms on a licensing agreement. If the two companies were to reach an agreement, IBM would initially sell a version of the system running the MacOS.

An upgrade would replace the System 8 microkernel with a more robust one and disable the Mac ROM chip. With those changes, expected by the end of 1995, users would be able to run either OS/2 or the Mac OS.

Standard system specifications will include a 100-MHz 604 processor, the System 8 OS, a 32-bit PCI-based graphics card, 16MB of RAM on Dual In-Line Memory Modules, and hard drives ranging from 540MB to 2 gigabytes.

Other features will include a 64-bit data path from the CPU to main memory, as much as 4MB of second-level cache, and the capability to support 1.5 gigabytes of memory on board.

The processor and the graphics card will both be installed on daughtercards, making it possible for users to upgrade to more powerful chips and graphics accelerators as needed.

Internally, the system will support a 10MBps implementation of Fast SCSI 2. An external SCSI connection would offer data transfer rates of 5MBps.

Apple would use dual PCI chip sets to support six PCI-based slots, letting Apple achieve bus transfer rates of between 90MBps and 100MBps, sources said.

The second PCI-based system will feature an Apple-designed graphics processor that uses the PCI architecture to deliver the same kind of graphics power that users can expect from a Silicon Graphics Indigo.

According to sources familiar with Apple's plans, the system will be based on a 100-MHz 604 PowerPC processor and will ship with

new technologies – and new opportunities

Power Macs Apple hopes

16MB of RAM and a minimum of a 540MB hard drive.

The graphics chip will come with at least 2MB of graphics memory and will be capable of processing 200,000 2D vectors per second. The chip will also be able to support low-level 3D graphics.

In addition to better graphics performance, the chip will showcase enhancements to the user interface and to Apple QuickDraw GX, which is expected to gain support with the release of Copland.

Initially, only one system is expected to use the chip, but Apple is considering using versions of the processor for its entire line, sources said.

Part of that decision is expected to be based on how soon third parties develop PCI-based graphics boards for the Power Macintosh, as well as the price and performance level of those boards.

Apple is expected to announce the product along with the other initial members of the PCI-based Power Macintosh line in the second quarter of 1995, sources said.

MW LAB

How Fast Are the 630 Macs?

TASK-PERFORMANCE TIMES (by system class)

Times are in seconds. Shorter bars are better.

Use these results to compare the performance of systems within a class, such as busi- ness and entry-level. For each class, we used a test suite made up of real-world tasks routinely performed by the class's typical user. Thus, the results for one class cannot be compared with results for another class.

	Processor	Drive-Access	Video-Display	Floating-Point
	Indicates raw processing power, which affects almost all aspects of performance.	Indicates performance on tasks that rely heavily on the hard drive.	Indicates perfor- mance on tasks that depend heavily on screen-redraw speed.	Indicates performance on tasks that heavily use a math coprocessor.
BUSINESS				
Quadra 840AV	118	59	49	59
Quadra 800	129	54	52	70
Quadra 650	136	57	53	74
Quadra 950	135	58	60	76
Quadra 630	139	61	64	78
Quadra 605	171	62	64	88*
Quadra 610	167	60	63	91
Quadra 660AV	170	67	63	84
Quadra 700	172	63	73	96
IIci	467		173	200

CORE-PERFORMANCE INDEX

Times as fast as a Classic (Classic = 1.0).

	Common	Scientific
Quadra 840AV	16.5	28.8
Quadra 800	15.4	26.8
Quadra 630	15.1	25.6
Quadra 950	14.7	25.6
Quadra 650	14.6	24.9
LC/Performa 630	14.3	24.8
Quadra 660AV	12.5	21.4
Quadra 610	12.1	20.9
Quadra 700	11.5	19.4
LC 575	11.0	18.1
Quadra 605	10.3	10.9
LC 550	5.1	8.7
IIci	4.9	9.4
LC 520**	4.8	9.0
LC 520	4.1	4.2
LC III	4.0	4.1
IIsi	3.3	3.8
LC II	1.9	1.9
Classic	1.0	1.0

*Does not include rendering test that requires FPU.

**With FPU.

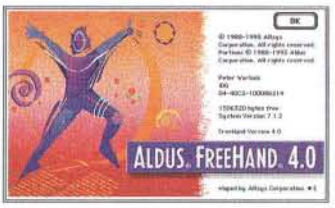
UK gets 630 in Quadra configuration

After initially declining to introduce it in the UK, Apple has announced that it will make available the Quadra 630, a coprocessor-equipped version of the LC 630 and Performa 630. Price will be less than £1,000.

The new machine is to be the entry-level Macintosh for users who need the maths coprocessor for running scientific and high-end graphic applications). It shares the form-factor of the Performa 630, and is PowerPC upgradable. It will ship with 4MB of RAM, a 250MB hard drive and an AppleDesign keyboard in its most basic form.

Keith Gould, business manager for the Mac entry-level range, said, "We believe that there is a strong need in the market for a maths coprocessor-equipped low-end machine with a choice of upgrade options and customisable features. With the Quadra 630, we are offering Quadra 950 power in a machine that costs less than £1,000 yet has upgradable processor technology, multimedia and networking options."

Maximum memory capacity is 36MB and options include an internal CD ROM drive, video-in card and the TV Tuner kit (which allows the user to watch TV on the Mac). The on-board communications slot will accept an ethernet card allowing office networking. The price includes keyboard but not a monitor.



Change of distribution for FreeHand

Computers Unlimited has been awarded exclusive UK distribution of FreeHand when MacroMedia assumes the rights from Aldus/Adobe on January 1, 1995.

David Pritchard, managing director of Macromedia Europe said, "CU's background and expertise in graphic arts and publishing ideally positions them to maintain and grow FreeHand's leadership position.

"As the existing distributor for our multimedia products, they have done an outstanding job for us."

James Sanson, Computers Unlimited's managing director, said, "FreeHand is and always has been an excellent product and under MacroMedia's guidance it will continue to be one of the top selling publishing products."

The other key Altsys product, Fontographer, will remain with its current distributor, Softline. Margaret Silk, Softline's managing director, said, "They will obviously have their hands full with FreeHand, so it makes sense to leave Fontographer with Softline where we already offer in-house marketing and sales expertise."

■ Altsys is getting good reviews for its update of FreeHand. Version 5.0 is expected to ship in the first quarter of 1995.

"Version 5 is what Version 4 should have been," said one beta tester. "Version 5 is the finished product."

Sources said new features include much-improved text-handling, and a redesigned interface with floating palettes.

Campbell joins CU

Bob Campbell is leaving Letraset to join Computers Unlimited as business manager for high-volume publishing products. CU and Letraset of shared distribution of a number of products, including Wacom digitizing tablets, and Fractal Design's Painter and Dabbler.

IN BRIEF

Control Data Systems has acquired the southern area operations of the KRCS Group. The deal – covering four AppleCentres in City of London, Victoria, Motspur Park and Shoreham – was followed by the news that CDS is to close the latter three. CDS was not available to comment on any potential redundancies, but it is believed the staff will be kept on as operations will be consolidated in the City of London branch, and maintenance contracts will be fulfilled from there.

The northern part of the KCRS business will continue from its head office in Nottingham, along with centres in Coventry and Swindon, and the Select Direct mail order catalogue operation.

Vicom Technology has been appointed distributor for Wave Research products. Filewave is an automated software distribution and management package. It is designed to automate software distribution, version synchronisation and usage monitoring network-wide using Finder-integrated software agents that manage files on mobile and desktop Macs. Available in various user-number packs from 20 to 1000, prices start from £671 (at £34 per user) to £41,400 (at £41 per user). Details from Vicom Technology, 0202 293233

Direct Networking is now distributing the Micro Router 1000R. The Micro Router is a remote access ethernet router supporting IPX, TCP/IP, AppleTalk and DECnet. It has a single auto-switching ethernet connection to thick, thin or 10BaseT networks. Price is £1,495 RRP. Direct Networking, 0800 771188

To coincide with this month's launch of Netware 4.1, Novell is announcing a new licensing policy that lets customers combine Netware 4.1 licence packs to more closely match the number of Netware users on their network. Novell will now be offering the licenses in 5, 10, 25, 50, 100, 250, 500 and 1000 user packs.

Pinnacle Micro, manufacturer and supplier of of some of the market's leading optical storage systems, has opened a sales office in the UK. Call 0256 782 566 for details of products and suppliers.

Nomai launches "optical killer"

Removable cartridge specialist Nomai – which this year won the right to supply SyQuest-compatible media – has announced a new storage system that matches optical technology for capacity, and leaves it for dead on performance.

According to the French manufacturer, the MCD (Magnetic Cartridge Drive) system offers performance equivalent to today's hard drives, while initial capacities will be half a gigabyte or better.

The company has also teamed up with IBM's UK manufacturing division at Havant, which will manufacture the drives. Cartridges will be supplied by Nomai, Iomega and Maxell.

Ken Wilkie, CEO at IBM Havant, said: "We are convinced this is to be the beginning of a long relationship."

Nomai co-founder Marc Frouin added, "The arrangement gives Nomai the ability to offer a superior-quality product at a very competitive price.

"This relationship will help convince OEMs that we can be trusted to deliver high volumes."

The drives will have a 1-inch form factor and use 3.5-inch cartridges. According to Nomai, performance is expected to provide 10ms access times, with sustained transfer rates between 4.5 and 8.25MB per second, depending on the host computer.

The company says this equates to 20-times the access speed of a CD, and 10-times the transfer rate of even a quad-speed CD player.

Nomai will offer two models to OEMs early next year providing 540MB and 680MB of capacity. It says by 1996, it will introduce drives offering 750MB and 1.2GB that will be backwards-compatible with the 540MB and 680MB models, respectively.

"We expect the street price to be between $350 and $399 for the drive, and just $59 for the cartridge within a few months of availability," Frouin said.

The technology is a joint European development under the EC's Esprit information technology initiative. Nomai's partners in the UK included Acorn, Scottish storage specialist Myrica, IBM, and the Storage Laboratory of the University of Plymouth.

Bye bye optical?
Nomai's new removable drives offer the capacity of opticals, with normal hard drive performance

Citizen canes overweight printers

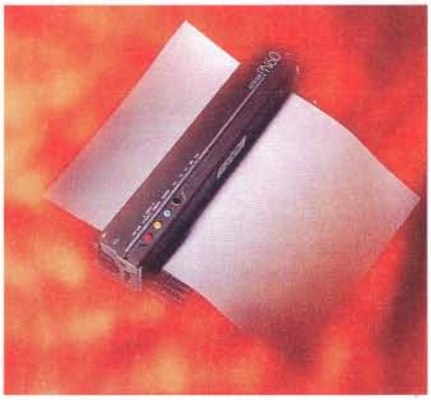
Citizen says it has introduced the smallest laser-quality printer in the world. The one-pound PN60 produces monochrome and colour output using thermal-fusion technology.

About the size and shape of a compact umbrella, the QuickDraw-based PN60 can print two monochrome pages per minute at 360 dpi and one colour page every two minutes.

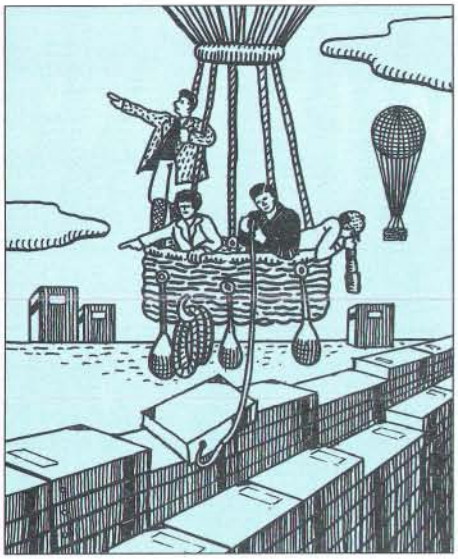
Available now, the PN60 has a suggested list price of £349. On-the-road options include a half-pound battery (£39) and an adapter for a car's cigarette lighter (for around £47).

The printer supports TrueType and Adobe PostScript Level 1 fonts and has five built-in fonts. Pages are hand-fed through the printer, and users can print on plain paper, envelopes, and transparencies. Black ink is supplied in tiny cartridges that cost about £5 a pair and print 30 to 40 pages each. Colour cartridges are about £10 for two and print four to seven copies per cartridge.

Details from Citizen UK on 0753 584111.



Somewhere, on the office network, there are reports on my client. Where do I start...?

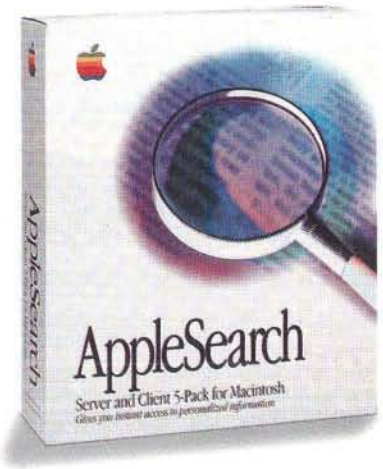


...Search me!

It's that vital client meeting in the morning. Your presentation must be spot on, informative and, above all, on time! Now where are those reports...?

You've been there before. The information you need could be in any files, including ones you have never seen. Anywhere on the network. Trying to find it quickly – and putting it together – can be your greatest nightmare.

That's why Apple™ are introducing their revolutionary **AppleSearch™** software. **AppleSearch** takes the sweat out of information gathering, even across the largest networks, providing you with a true competitive advantage. It condenses all the knowledge and effort of the whole company into a single report. Intelligent network query handling will filter out any irrelevant data using advanced reporting. It even prioritises information to fit your brief.



And it's fast. By indexing all documents, **AppleSearch** conducts accurate, reliable searches that take seconds – not hours.

What's more, you don't need to be a computing genius to use **AppleSearch**. Search queries are made in English, not computer language. And it doesn't demand endless repetitive searches: a search on "car", can also pick up all references to "vehicle" and "automobile".

So next time you need those reports in a hurry...

AppleSearch

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(9am-6pm) for more information

Apple Computer

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INFO*LINE* NO. 145

Four extra processors. For extra horsepower.

Popular mythology states that once you acquire a Power Mac™ you'll never have to wait for anything besides a number nine bus. Sadly, this is total fiction. Adobe Photoshop™ users still spend an unhealthy proportion of their lives watching wristwatches go round when they could be doing something useful instead.

So, to enhance the world's creative horsepower, Radius have developed PhotoEngine™ – a head blowing Photoshop accelerator that lets you put your foot down rather than your feet up.

Four 32 bit DSPs (Digital Signal Processors) – cunningly mounted on a single NuBus™ board – produce devastating performance compared with any production line Apple® CPUs including Power Macs.

Most tasks take about half as long, but the greatest benefits are seen if you work on large files (over 20Mb) and CYMK images where PhotoEngine can get things done in up to a twelfth of the normal time.

PhotoEngine power gives you time to be creative.

No matter what you do with Photoshop and regardless of which NuBus Mac you have, PhotoEngine will accelerate it – hugely. What's more, PhotoEngine comes with a 30 day money-back guarantee* – so you can bring it back if you don't like it – and a Worry-Free Warranty that ensures 24 hour replacement should it ever breakdown.

If you need any more convincing, simply call 01483 772 773, or write to Radius, 13 Westminster Court, Hipley St, Old Woking, Surrey, GU22 9LQ for some performance comparisons to help speed your conclusion.

RADIUS Adobe charged 30 DAY MONEY BACK GUARANTEE WORRY-FREE WARRANTY

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INFO*LINE* NO. 116

Adobe planning OCR front end for Acrobat

Adobe plans to strengthen its Acrobat electronic document software with the addition of an optical character recognition (OCR) package that will let users turn paper-based documents into digital ones that can be viewed by any other user.

Adobe's Acrobat software lets users store digital documents in a general file format so they can be viewed with their original formatting and typography without the need for the application that created them.

The OCR software, called Capture, is included in recently delivered beta copies of Acrobat for Windows. Sources said the package will ship next spring.

The OCR technology lets users scan documents and then convert the archived files into Adobe Portable Document Format. Unlike other OCR products that scan a document in its entirety, Capture builds zones in a scanned document that let users work separately with text, graphics, and tables. Capture also retains the fonts used in the original document.

"It is the first package to build a characteristic of the fonts," said one beta-tester. "It is the first one to realistically capture the document. Adobe has waited a long time to go into beta, and they have a much more solid product than they realize."

Adobe officials would not disclose details about the company's plans for an OCR package. However, the company has been working on OCR technology for a long time, said David Pratt, senior vice president and general manager of the application products division.

"[Our OCR technology] is not a regular OCR package," Pratt said. "We hope to bring it to market over the next year. It will round out our Acrobat product line."

New Macs to offer better security

KODIT's Security Tagging System has been chosen by Apple Computer as part of its new Apple Assistance package of customer services. Details of the security system will be included in every Mac shipped from Apple's manufacturing plant in Cork, Ireland.

The system uses security tags bonded to valuable items with an ultra-violet resin. All items tagged are registered on a central computer database along with full details of the item, its location and details of the legal owner. If the Mac is stolen, the owner and the police have access to all the information they need to trace the missing item.

John Measey, Apple UK's director for service support, said that computer theft has been increasing in general and the Mac in particular appears to be very popular because of the high resell value. When Apple began searching for a possible solution it found that the KODIT database was regularly used by the police. Measey added that Apple is looking into other ways of preventing Mac thefts.

Contact KODIT Database on 0625 529283.

Apple wins $2m for UK interactive TV

The expansion of an interactive television service trial in the UK has resulted in a $2 million order for Apple set-top boxes.

The trial, run by BT, is one of the first major interactive television projects in the world. Due to go live in the summer of 1995 in Colchester and Ipswich, it will provide video on demand and other interactive services via standard home telephone lines to 2,500 subscribers.

"The systems that Apple provided, both hardware and software, facilitated extremely efficient installation and maintenance and gave our trial customers a very real taste of the power and convenience of interactive television." said Rupert Gavin, director of BT's Information Communications and Entertainment Programme.

The technology used in BT's trials has been undergoing technical evaluation since March last year. Following its success, BT has now awarded a number of contracts for the marketing trial.

Ready for prime time?
Apple, Oracle, Sequent and BT offer interactive television, home shopping and online banking

Oracle will provide the multimedia database and navigational software and nCUBE will provide the media server. The customer management system comes from Sequent, and Apple is supplying the set-top boxes.

The set-top box is based on an LC475 running Mac OS modified to support MPEG and a 2MB/s network interface. It includes QuickTime multimedia software so users can see video, music, text, animation, and other dynamic media.

Sequent is supplying the highway controller, the central management component of video on demand. Requests to the highway controller are sent from Apple set top boxes in the home over the telephone network via a high performance ATM switch.

For all applications, the highway controller may also be used to monitor and track consumer behaviour, building a database of consumer preferences to help tailor services to individuals' needs.

During the period of the trial, BT aims to offer a variety of services including: home shopping from Thomas Cook to Safeway; a range of educational programming for homes and schools; more than 400 hours of movies and 600 hours of television programming (video on demand); and a home banking service offered by National Westminster Bank. **- Mary Cowan**

BugWatch

If you encounter a bug or serious design flaw in a Macintosh product, please let BugWatch know.

After Dark 3.0 users have reported crashes when running Norton Utilities' FileSaver, SoftNumbers' M.Y.O.B., or certain After Dark minimodules when After Dark's password protection is turned on. Berkeley Systems expected a fix, called version 3.0a, to be available before the end of the year. Registered users should be able to call to request the new version from Berkeley Systems or download it from most online services and the Internet..

Symantec Antivirus for Macintosh (SAM) 4.0 doesn't remember when users tell it to ignore a suspicious item like a preference file or extension. SAM also fails to scan a floppy disk when the application is open and the disk is inserted into the drive. A Symantec representative says version 4.0.1, scheduled to be released soon, will fix these problems but the company will mail the new version only to users who request it.

Apple recommends that Power Mac users turn on virtual memory for maximum performance. But Frame Technology's FrameMaker for Power Macintosh crashes when users import Microsoft Word files into the application and virtual memory is turned on. Frame promises a fix in the next version but won't say when it will be available or how much it will cost. In the meantime, users can either turn off virtual memory when using filters, or call Frame's technical support to learn how to edit the application's data fork.

Macworld News

Yamaha speakers

Yamaha's Media Technology Division has announced an entry level powered speaker system and a subwoofer. Joining the recently-launched YST-10 is the YST-M5 (£55). These entry-level monitor speakers feature three watts per channel output. The YST-MSW10 (£116) is a compact subwoofer that features 25 watts of power, and deep bass response. Zye Technology, 0293 538 666.

Apple in new alliance for communications

Apple has joined AT&T, IBM and Siemens as a founding partner of Versit, a new joint venture to establish a common standard for computer and other communications systems. And once again it finds itself warring with Microsoft and Intel.

At a press conference in New York, Apple CEO Michael Spindler pledged to make Macintosh "the universal platform for a wide variety of communications products and services". The intention is to bring together telephones, PBX systems, personal digital assistants, and computer networks.

A core part of the specification is Apple's GeoPort adaptor, currently available for some Quadras and Power Macs.

"Versit selected Apple's GeoPort architecture as the basis for its specifications for a universal multimedia interface," Apple said. "GeoPort is the only cross-platform serial interface that is designed to link a computer with virtually any other communications device, and transmit any kind of information, anywhere in the world."

"We're at the forefront as the worlds of computers and telephones converge," said Rick LeFaivre, vice president of Apple's Advanced Technology Group. "Our customers know and trust us to bring the power of these very different worlds to their desktop in a way that is meaningful to them."

However, Microsoft disagrees. "Most of the PC industry looked at Geoport in some detail, and they rejected it," said Charles Fitzgerald, a Microsoft product manager.

Instead, officials from Intel and Microsoft – who are rumoured to have been excluded from the new consortium – said they are close to completing their own high-speed serial link known as 'serial bus' with the open support of Compaq, and less firm commitments from others.

The 5M bit/sec serial bus is expected to go into demonstrations in the first quarter of 1995, with shipments starting in the third quarter, according to Intel.

DPL offers free drives for CD writers

In a switch on the disposable razor ploy – give away the razor, sell the blades – Data Peripherals is giving away recordable compact disc systems to anyone prepared to commit to buying agreed volumes of CD media.

Supported by PDO, the optical media division of Philips, the offer applies to quad-speed writing systems from Yamaha and dual-speed drives from Philips and Kodak. The offer is worth around £4,000. Customers taking up the offer agree to buy 1,000 writable Philips CDs initially, and to take a further 1,000 discs each year for the next two years in minimum deliveries of 500. The discs are currently priced at £10 each.

DPL guarantees future prices will be fixed at 20 per cent below normal list price over the next two years, at a maximum price of £8.50 each from July 1, 1995; or £7.25 each from July 1, 1996. There are other options available for users with lower volume disc use.

Full details from DPL on 0785 57050.

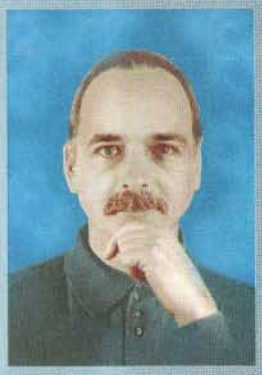
Consumer Affairs

At the Gates of Microsoft City

Comic aficionados will be familiar with MegaCity One, the urban beat of Judge Dredd, a somewhat less than urbane iron-jawed law-giver from the 22nd century. Fighting crime with ruthless efficiency, Dredd literally is the law and anyone who tries to go against that law or has the temerity to stand up to him or his kind, faces instant and gratuitous punishment.

I think Bill Gates would like to be Judge Dredd. For many of us in the Macintosh community, the Microsoft vision of the future looks more and more like MegaCity One. Critics may still comment on the arrogance of Microsoft product launches and advertising campaigns, but Bill laughs all the way to the bank.

Fortunately, we don't live in MicrosoftCity One just yet. And while I'm not a big fan of litigation, it might be down to the current crop of judges to ensure that Gates doesn't succeed in becoming the Dredd of the future.



Michael Prochak

In the US, the Justice Department is currently expanding its antitrust investigation into Microsoft's $1.5 billion buyout of Intuit, a move that could delay the whole deal and possibly force some major changes to its terms. It's been suggested that Microsoft intends to use Intuit's personal-finance software as a platform for getting into electronic-commerce services such as home banking and stock trading, which might allow it to collect a transaction fee every time someone uses the service. The fear is that Microsoft is building another near monopoly in the infant industry of online consumer banking and finance.

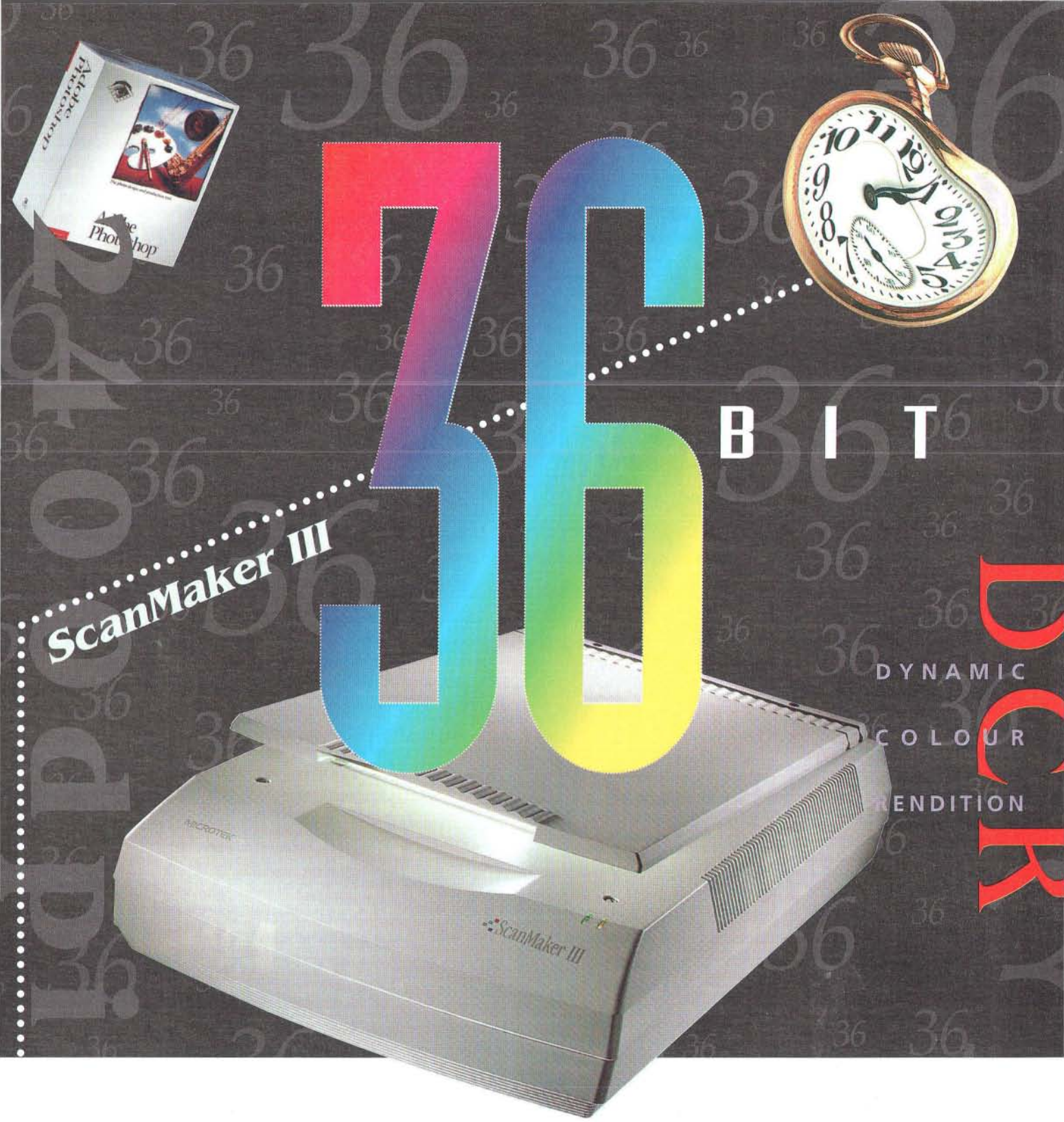
Apple's own clumsy attempt to defend the uniqueness of the Mac by suing Microsoft went badly wrong. As a result, Windows 95 flaunts a Mac-like interface that will make it increasingly difficult for consumers to differentiate between the 'real thing' and the Microsoft make-over.

And increasingly we see Microsoft foisting the unique aspects of its Windows interface on Mac users (as in the latest versions of Word and Excel) and on developers who use its cross-platform development system.

Microsoft's software imperialism is about as healthy for the computer industry as Serbian nationalism is for Bosnia and Croatia. Personally, I still hold the increasingly unfashionable view that choice is good and that no one person, company or political party should totally dominate the scene for any extended period of time. A Wintel version of a MegaCity One future would be a nightmare beyond belief, and players like Apple would simply become victims of rough justice or face eternal obscurity in the out-lying wilderness of 'cursed earth'.

Microsoft's 'Windows everywhere' strategy may look like an attractive safety net for software developers and conservative corporates in the short term. But when competition and innovation disappear, the consumer of the future will have only one choice... either buy Microsoft at any price, or simply do without.

Incidentally, the movie version of Judge Dredd comes out next summer starring Sylvester Stallone. When they do the Microsoft version, I wonder who they'll get to play Bill Gates? And here's hoping for a happier new year.



ScanMaker III - the world's first 36-bit desktop scanner is a Microtek

Microtek have revolutionized the scanner market many times. Some of our accomplishments? The first 300 dpi scanner on the market, the first scanner with 256 greyscales and the first affordable colour-/greyscale scanner. Now Microtek rock the market again by introducing ScanMaker III, the first 36-bit flatbed-scanner. ScanMaker III produces the greatest quality of images in a single pass at up to 2.400 dpi. It picks up the darkest shadows and the subtlest highlights in 4096 smooth graduations, translating to an unprecedented dynamic range of 3.2. Microtek's easy-to-use calibration technology Dynamic Colour Rendition (DCR) is included. By using DCR, the need to enhance images is virtually eliminated. A full version of Adobe Photoshop is part of the package. An Automatic Document Feeder and a full-size Transparency Adapter are available. Microtek provide on-site-maintenance for one year at no extra charge. **So, get to know the revolutionary ScanMaker III at your nearest authorized Microtek reseller:**

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POWERLOOK

A New Generation of Scanning Power

SPEED

With a full A4 colour preview in under seven seconds and an A4-600dpi colour scan in one minute, the PowerLook is the fastest high resolution desktop scanner currently available.

INTELLIGENCE

PowerLook is equipped with the MagicScan, an intelligent one-step scanning TWAIN driver featuring batch scanning, auto-density, colour correction, unsharp mask and descreening.

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The PowerLook features a maximum scanning resolution of 2400dpi and a density range of 3.0D*, making it possible to capture fine details of highlight and shadow with sharp precision.

Most Powerful Flatbed Scanner Ever

- Optical resolution: 1200 x 600dpi.
- Maximum resolution: 2400dpi.
- 30-bit color in one single scan.
- 7 seconds preview scanning.
- High density range: 3.0D.*
- Dust-free optical device.
- Low-noise mechanics.
- Transparency adaptor included.
- MagicMatch color calibration software included.
- Adobe Photoshop included.

Mac User
1994 Sept.

Other color scanners from UMAX include the affordable, three-pass Vista and the speedy, one-pass Vista-S6.

*For transparencies with 30-bit colour output.

Adobe Photoshop™ Included

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Windsor, SL4 3DR, U.K.
Tel : +(0753)830-999
Fax : +(0753)831-094

UMAX Data Systems, Inc.
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Taipei, Taiwan, R.O.C.
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UMAX
UMAX Means Speed

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INFOLINE NO. 124

Product News

By Mary Cowan

HARDWARE

Ovation 920

Proxima's latest LCD tablet, Ovation 920, can display 1,280 x 1,024 images.

It lets presenters zoom in and annotate as they are presenting. This "Fit-to-View" technology can expand sections of high resolution images, while maintaining their original proportions and pixel ratios. A presenter can write directly onto the display image with a light pen. The entire screen can also be cleared so that the projected image can be used as a whiteboard.

The new tablet has a 10.4-inch LCD panel; displays 2 million true colours from a palette of 16.7 million and is priced £12,495.

Reflex, 081 759 0005; Maverick, 0734 886 266. InfoLine No.200

EcoMonitor-Mac

The EcoMonitor-Mac from Nighthawk Electronics is designed to reduce glare and heat from monitors, and save energy. It meets international safety and RFI standards including FCC and UL, in addition to all European standards. The unit automatically switches off the monitor when the keyboard or mouse has been inactive for a preset period of time. Cost is £49.

Nighthawk Electronics, 0799 540 881. InfoLine No.202

Video Machine – new animation bundle

Fast Electronic has announced a new bundle for animation within post-production. The system downloads animations to tape and performs all the traditional functions of a linear editing suite.

Bundled with the package is Video Machine Mac, a linear edit controller for the Mac. Also included is a Studio Control Box, a control unit for the connection of professional VCRs that fits all studio racks; and Animaq software, specifically re-designed for Video Machine hardware.

Animaq enables frame-accurate recording of animations and video capture (single frames).

If bought separately, the components cost £6,575; the bundle price is £4,995, a saving of £1,580.

Fast Electronic, 071 221 8024. InfoLine No.203

microLaser PowerPro

The latest addition to the Texas Instruments microLaser family of printer is the PowerPro, a 600 dpi, 12ppm Post-Script printer. It features a 25MHz RISC processor with a 16K cache and 6MB of memory as standard, expandable up to 22MB.

A true mixed platform printer, it features Adobe PostScript Level 2 software and PCL5 emulation along with Adobe Intelliselect automatic language switching.

Initially it will be shipped with in-built AppleTalk and High-Speed parallel interfaces. TI will also offer an ethernet interface that supports Novell, Netware, TCP/IP (UNIX), Microsoft LANManager and IBM LANServer network protocols on a single board.

Other options include memory upgrades, serial and SCSI interface and an optional 30-envelope tray.

Pricing is not yet available. Texas Instruments, 0234 223 273. InfoLine No.232

Eizo FlexScan T662

Eizo has introduced the FlexScan T662, (£1,999) its latest 20-inch monitor. It has a resolution of 1,280 x 1,024 with a refresh rate of 80Hz. As part of the FlexScan range it has a dual input function, so that there is simultaneous connection to two workstations and/or Macs.

The T662 incorporates the Eizo ScreenManager, a display manager driven by a microprocessor. It can memorise 20 user-definable settings in five European languages. It displays readings of the horizontal and vertical frequency in use and informs the user if the signal is not present or is out of the 30kHz-85kHz horizontal, and 55Hz-160Hz vertical frequency ranges.

Complying with EPA Energy Star, the PowerManager function reduces energy consumption by up to 95 per cent and shuts the monitor off when it is not in use.

Included is Sonnetech's Colorific colour management software. It uses Kodak technology so that colours can be accurately printed according to the on-screen representation. Users measure colours available on the monitor and calibrate them to the printed colours.

Available from Eizo directly, 0483 757 118. InfoLine No.233

Océ 6470

The second generation of the Océ 6450 is now available. The Océ 6470 (£4,100) is a multi-network capable laser printer offering higher output resolution, faster print speed and better connectivity.

It prints 16ppm on A4 at 1,200 x 600dpi and can print on paper sizes up to 12 by 19 inch, with full-bleed printing on 11 by 17 inch ledger/A3.

The Océ 6470 features Crown architecture intelligence; Crown-Net interface option; automatic language recognition and selection; and is Energy Star compliant. It supports PostScript Level 1 and 2, with 39 typefaces: other print languages and standard or customised fonts can be added through PCMCIA-standard interface slot(s). Three standard, simultaneously active, interfaces provide serial, bi-directional parallel and LocalTalk connectivity. An optional hard disk can be added via the I/O slot to extend font storage and print job spooling. There is also an optional network security card to control access to authorised users.

Océ-Printing Systems, 081 502 0038. InfoLine No.204

Product News

Kodak 1580

The Kodak 1580 Copier-Printer is a network printer offering three spot colours and black on-line. Designed specifically as a cost-effective high volume spot-colour printer, it features Accent Colour and Lionheart Print Management System for networks. Cost is approximately four pence per print.

"The Kodak 1580 Copier-Printer with Accent Colour can be used for a broad range of business graphic applications where high quality documents are required." stated Ross Dorras, Kodak Office Imaging's marketing manager.

The Kodak 1580 Copier-Printer has a print speed of 70ppm for black and white output and 17ppm for black and three spot colour. It is a true Adobe PostScript Level 2 printer.

For complex document files and multiple jobs, it has a 200Mb hard disk and a powerful Raster Image Processor (RIP). It features copy/print multifunctionality, a monitor and keyboard, and an intended print/copy volume of 40,000-120,000 impressions per month. It ships with Windows and Mac PostScript Drivers for stand-alone systems or networked environments.

Pricing was unavailable at time of print, but will be approximately £80,000.

Kodak, 0442 611 22. InfoLine No.234

Tektronix price cuts

Tektronix has cut the prices of two of its printers. The Phaser 200i A4 thermal wax printer has been cut from £5,395 to £4,995 and the Phaser IISDX dye sublimation printer from £5,695 to £4,995.

Tektronix also announced pricing for the Phaser 540 Colour Laser Printer: £6,995.

Tektronix, 0628 403 600. InfoLine No.205

Philips Brilliance 21A

Philips has announced the introduction of the 21-inch, Brilliance 21A, and the 20-inch 20B colour monitors. The 21A (£2,999) and 20B (£1,199) are aimed at graphics-intensive users such as CAD/ CAM or DTP. The 21A is compatible with Mac IIs and Quadras while the 20B is compatible with PCs and Apple computers.

Philips 081 689 4444. InfoLine No.210

Stylus 400

Epson has released an entry-level inkjet printer priced at £225. The cost of running the printer has been kept in mind: a page costs 1.4 pence. The Stylus 400 also features Piezo printhead technology printing at 360 dpi.

The model features a 100-page A4 paper cartridge as standard and prints at 125 characters per second in letter quality.

Epson, 0442 61144. InfoLine No.209

ScanView A/S adds ScanMate 4000 to its range

The ScanMate 4000 is a one-pass, high-speed drum scanner, with a maximum resolution of 4,000 dpi and an optical density range up to 3.8. It can scan transparencies and reflectives, in positive or negative format, and can handle colour, greyscale and line art with or without existing screen. It features a removable drum, so additional drums can be prepared while the active drum is being scanned.

It ships with Adobe Photoshop plug-ins and is priced at £23,900.

SDL, 081 309 5000. InfoLine No.207

Optronics drum scanners

Optronics has launched three high resolution desktop drum scanners called ColorGetters.

The ColorGetter 3 Prima sells for £22,400 and has an 8" x 10" format aimed at those with modest production requirements.

The ColorGetter 3 Plus, £26,000, has a 10.5" x 12" image format: the ColorGetter 3 Pro, selling at £29,700, has an 11" x 15" format.

All three support a maximum resolution of 8,128 dpi and allow the low-end (Prima) user to upgrade as their business expands.

Optronics 010 31 2503 66819. InfoLine No.208

SOFTWARE

PrintDesk

Bodoni System has launched PrintDesk a print serving and OPI (Open Prepress Interface) system. It uses ANM software technology to reduce print times on any network. It puts the user in charge of production and can examine, stop, run, move, hold, prioritize or reorder the print jobs.

PrintDesk includes PostScript Extended Error Reporter (PEER) that tells the user exactly which graphic or image is the problem when a print job won't run. Automatic Intelligent Image Linking finds the required high-resolution images, even if they have been moved, and smart storage stores print jobs for re-runs.

Cost: £3,400. Bodoni Systems, 0895 825 776. InfoLine No.211

IntelliPics

IntelliPics is a cut and paste authoring package that creates interactive multimedia activities. Aimed at teachers and educational developers, the activities can be operated directly by learners in a controlled environment.

It has a built in library of over 300 images in both colour and black and white, covering 15 categories and interests. There are 35 pre-prepared animation sequences that can be edited; alternatively, new ones can be created from scratch by using the built-in Movement Editor.

To get users going there are six activities ready, including matching and communication, making choices, and cause and effect. The quizzes provide matching, counting, and spelling activities.

Additional features include automatic overlay production and

Hitachi new monitors

Hitachi recently launched its 20/21" series of colour auto-scanning monitors specifically designed for high resolution application use such as CAD and CAM plus DTP. The series, known as HM48s, feature a flatter screen for an increased image area while lessening glare. The price for the 20-inch is £1,550 while the 17-inch retails at £1,750. Both conform to several safety standards regarding radiation emissions and their screens feature anti-reflection, anti-glare and anti-static design.

Hitachi, 0628 585000. InfoLine No.235

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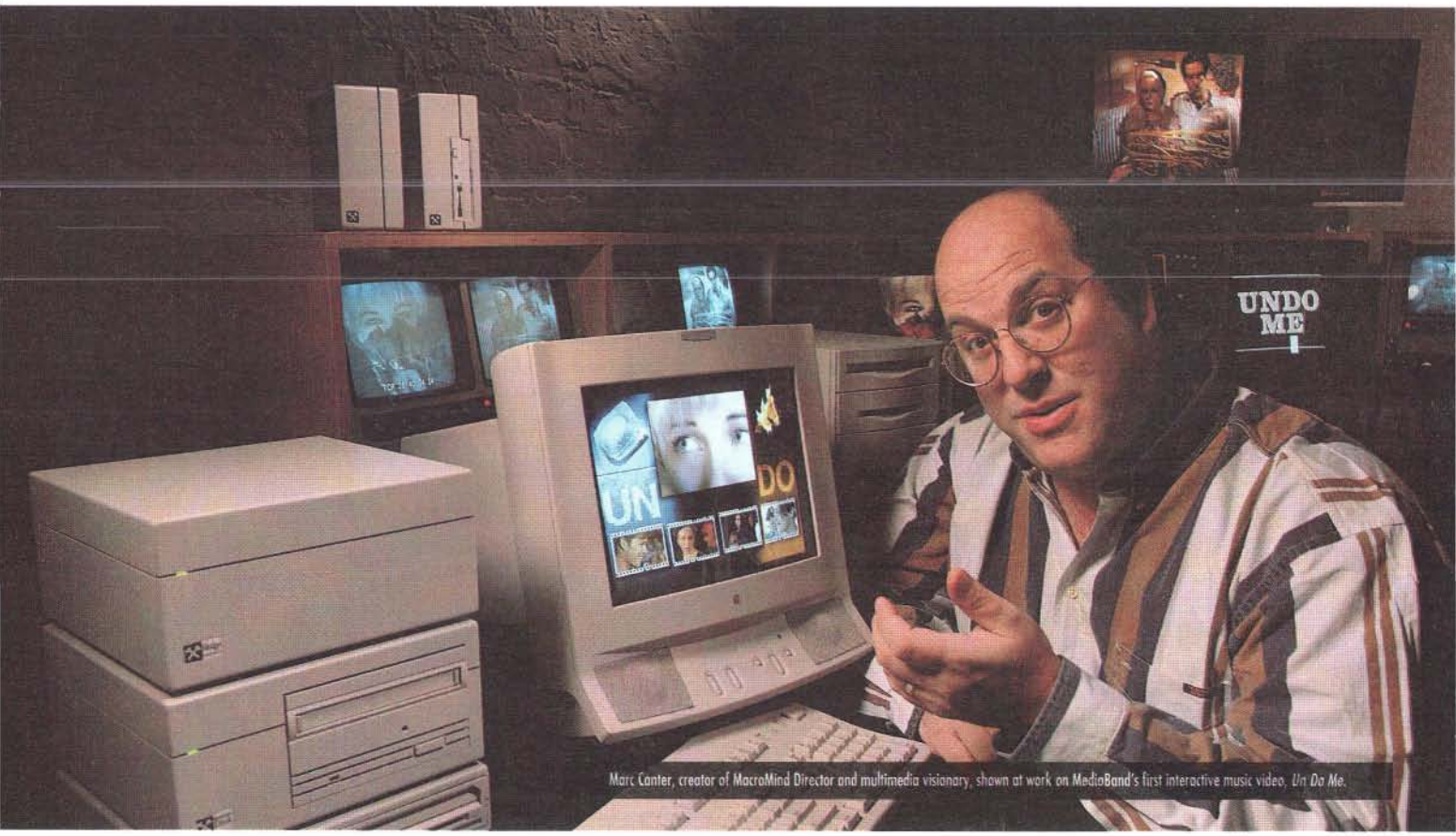

Marc Canter, creator of MacroMind Director and multimedia visionary, shown at work on MediaBand's first interactive music video, *Un Do Me*.

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11MB/sec and 17MB/sec on the Power Macintosh 8100 and Quadra® 840AV. Are the industry's fastest sustained transfer rates the only reason multimedia visionary, Marc Canter, chose the new SledgeHammer™ II and SledgeHammer Wide arrays from FWB? No! Capacities of up to 17.4 gigabytes were important. And his other SledgeHammers got top marks from him, as they had from MacWEEK, MacUser and Macworld. But for his new MediaBand digital music video projects, the measure he applied first was RAID speed. That's why he applied the Hammer.®

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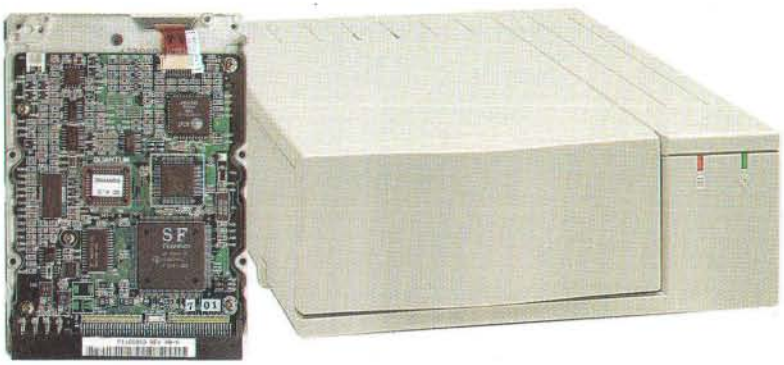

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Quantum	700 Prodrive	1 Yr	668Mb	£239	£289
Quantum	1080 Empire	2 Yrs	1069Mb	£438	£496
Quantum	170 Powerbook	1 Yr	163Mb	£205	£259
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6Mb Power Book 160/165/180	£127
6Mb Power Book 165c/180c	£162
8Mb Power Book 150	£253
8Mb Power Book 160/165/180	£162
8Mb Power Book 165c/180c	£215
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Video RAM	
256K Video RAM Quadras, Centris, PPC 7100	**£9.50**
512K Video RAM LC, LC475, Duo dock, PPC 8100	£22

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Ethernet SCSI adapter - Powerbooks	£169
Ethernet SCSI adapter - Desk top Macs	£159
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Product News

US Robotics Sportster 28,800

US Robotics has launched a V.34 data modem and 14,400 bps fax modem in one small, portable unit. The pack includes Quicklink II fax/data software and retails for £299. There is a PC card version available for the Mac in approximately four weeks from this issue. Aimed at serious users of the Internet, the Sportster is compatible with V.Fast class and lower speed standards such as V.32bis and V.32 (9600 bps) modems.

US Robotics Ltd, 0753 811180. InfoLine No.236

sending to the keyboard. Overlays can be edited with OverlayMaker to produce customised layouts, using colour, braille, symbols, pictures, or other languages.

Priced at £119, it is available from IntelliTools' supplier KCS. Call 0703 584 314. InfoLine No.212

The Rosetta Stone

Rosetta Stone was developed by Fairfield Language Technologies to teach languages in the same way we learn native language. It currently can teach English, French, German, Spanish and Russian shortly.

There are 3,600 real life colour images, thousands of phrases spoken by native speakers and voice recording capability. It can place emphasis on either spoken or written language.

The Rosetta Stone Level 1a (£395) has 92 chapters and is designed to take students from beginner to intermediate level. The Rosetta Stone Power Pac (£99) has 22 chapters of the four languages supported designed to meet the language learning needs of beginning students of any age. Each language version comes with an illustrated user's guide, language book with curriculum text and student exercises, and a student management system.

Prestige Network, 0344 303 800. InfoLine No.213

Producing Energy

Producing Energy, an educational package, is now available on the Mac. It examines and compares different ways of energy production in locations around the world. Animation and graphical presentations take the user through each stage of power production in different types of power plants, covering coal, gas, nuclear, solar, wind and hydropower plant.

It costs £59 for a single user; £149 for a site license.

AVP, 0292 625 349. InfoLine No.214

Binuscan ColorPro

ColorPro is an automatic colour correction and separation package for scanners, available exclusively from IMC.

Colour correction, sharpening, CMYK separations and screening are all performed automatically, and files are saved in TIFF, EPS or DCS formats. Working in the background, scans are initially saved to a folder that is constantly checked by ColorPro. These are then picked up and processed, with the resulting images filed ready for use.

There is a plug-in filter that lets the user view a scan on-screen, containing several thousands of colours, and make final changes without having to go into Photoshop.

It costs £1,395, including a single user dongle; an Apple RGB version is available at £395. IMC offer a full UK lifetime support.

IMC, 0753 830 999. InfoLine No.215

Full Contact

Amtech has announced the fully localised UK edition of Full Contact (£129). This relational contact manager/personal information manager features MultiLink functionality, sophisticated information filtering, import/export capability and drag and drop. Version 2.5 is also fully compatible with Apple's System 7.5.

Other features include: network shared calendars, PowerTalk Mailer support and AppleGuide support.

Amtech International, 0202 476 977. InfoLine No.216

SuperLabel

SuperLabel is a database designed specifically for organising and labelling collections of slides or other images. Four different label formats are supported, for use with 35mm slides, 2.25 inch and 4x5 transparencies.

Once the label format has been chosen, each image is entered into the database with descriptive titles. Each image is assigned a number that includes a category code, page and slot number. The page and slot numbers refer to slide filing pages.

It costs £99 and is upgradeable to Phototrack, a more comprehensive application that handles submittals, invoices, client information and can also scan in bar codes.

As a special introductory offer, BBF Publishing will pay the VAT and postage on all orders received before January 31, 1995.

BBF Publishing, 0920 871 866. InfoLine No.217

PowerSecretary

PowerSecretary is a free-form speech dictation system for those who can't, aren't able or just don't want to use their keyboard.

It lets users enter text in any application and control the application by spoken words. Menus may be selected verbally or by graphic tools; users can respond to dialogue boxes, click on buttons, enter data or issue macros.

Text can be dictated accurately at up to 45 words per minute. It comes installed with a 120,000 word dictionary based on the Random House Dictionary and research into the most commonly used words in business.

PowerSecretary comes bundled with CE Software's QuicKeys macro program, so that text macros can be created.

It ships with a standard ASI headset microphone, but other microphones are available as options.

It costs £1,495. Responsive Systems, 071 602 4107. InfoLine No.218

Canvas for Power Mac

Deneba Software is now shipping Canvas 3.5 in native mode for the Power Macintosh.

Deneba claims that a 5.1MB file containing more than 24,000 vector objects was reduced from a full-size illustration to fit the screen 1,261 per cent faster on a Power Mac than on a IIci, and 454 per cent faster than on a Quadra 840av.

The Power Mac version has the same feature set and interface as

FP-600S

Dainippon Screen's FP-600S is a large format, full colour PostScript printer that produces large format colour proofs, of four or eight imposed pages, in 12 minutes for standardsize of 601 x 439mm.

The printer's dye-sublimation thermal transfer system features two thermal print heads that can generate 256 steps (8-bits) per process colour for fine colour distinction. Draft copy can be produced at 64 steps per process colour in 7.5 minutes for standard-size output.

The FP-600S can produce output in standard 439mm x 601mm, 878mm x 601mm, and up to 2,997mm x 601mm for panoramic output. The user downloads the appropriate colour conversion table selected for the output material being used. Colour calibration is then done 'on-the-fly' as the colour data is output to the printer. There is a grip-type paper-feed system that keeps the paper properly aligned to ensure precise registration of colours.

The FP-600S is priced at £50,000. Dainippon Screen, 081 205 1213. InfoLine No.237

Product News

MacInteriors

MacInteriors lets users view interior designs in 3D and in colour from a variety of elevations and perspectives.

To create 3D rendering of any room or space, first use MacInteriors' Room Drawing tool to drag out a rectangle and automatically create a room outline. Then specify the locations and dimensions of doors and windows using the Fixture tool. Finally, open MacInteriors' Library of over 100 items, choose the required furniture and accessories and position them.

There are tools to let users create their own furniture items, which can be stored in a library. There is also a pricing feature, so that objects can be assigned values, and a report window for listing and providing a total cost of all objects in a room.

MacInteriors costs £89; multi-user packs and demos available. Microspot, 0622 687 771. InfoLine No.238

version 3.5, but includes a smart installer that automatically installs the appropriate version.

It contains a CD of 10,000 clip art images and the Canvas Professional Type Library, a collection of 2,000 TrueType fonts. The illustrations are editable and include: people and places; plants and animals; architectural drawings; and flow charts.

Users who purchased or upgraded to Canvas 3.5 after July 1, 1994 will receive the new Power Macintosh software and CD free. Those who purchased or upgraded after March 14, 1994 will receive the Power Macintosh software free. Canvas 3.5 is priced at £290.

Principal, 0706 831 831. InfoLine No.219

Marathon

Marathon (£49.99) is the latest game from the makers of Pathways into Darkness. Set in the future, players are sent into space on a colony ship to contend with an alien onslaught. There are more than 45 levels, and its automapping feature tracks every move. Up to eight people can play together over a LocalTalk, ethernet or ARA network.

Features include texture mapped 3-D continuous-motion graphics, stereo sound, dynamic sensing artificial intelligence and full screen graphics with five degrees of freedom.

Softline, 081 401 1234. InfoLine No.223

Agfa RIPs

Agfa has released both hardware and software RIPs that feature increased performance for imagesetters and narrow the gap between hardware/software versions. The Agfa Viper 1.5 software RIP on a top-end Power Macintosh can offer the same performance as an Agfa Star 400 RIP. The Viper can run faster than a basic Star 600 when you add an Adobe PixelBurst card allowing an increase in screening productivity.

Agfa will also supply a combined software/hardware RIP with the use of its Multistar technology.

Agfa Graphic Systems, 081 231 4371. InfoLine No.222

Learn to Speak French

Guildsoft has released Learn to Speak French v4.0 (£139) as part of its Learn to Speak series of tuitional software. The format of the new release will follow previously released versions of Learn to Speak Spanish.

It features 30 chapters of stories and action including Quicktime movies. The CD includes exercises, conversations, vocabulary and grammar plus a 420-page reference book.

Guildsoft Ltd, 0752 895100. InfoLine No.221

AppliCount Pro and Plus

AppliSoft has announced System 7.5 compatible versions of AppliCount Professional and Plus.

New features include Cash Flow Forecasting, Consolidation, Asset Register, Credit Reports, Drill Down, detailed reporting, integrated Address Book, and extended Invoicing facilities.

AppliSoft has also introduced a 30-day money back guarantee, and can offer a customisation service on the software for any organisation.

AppliSoft, 0763 241 034. InfoLine No.225

Planbuilder for Power Mac

DPS Typecraft has launched its Planbuilder page planning program for PowerPC. The tool can plan up to 3,000 ads per minute. According to DPS' experiments, the Power Macintosh version can increase performance by up to 700 per cent although we were not told in what areas this had occurred.

Planbuilder can integrate with the ad booking system to produce flat-plans quickly. This product is primarily for newspapers, DPS' specialist area.

DPS Typecraft, 0268 523471. InfoLine No.220

CD-ROM

Electronic Arts 3D Atlas

A good atlas can make the world your oyster. This one starts with a 3-D, photo-realistic representation of the third planet from the sun (a.k.a Earth), based on satellite data and statistics. The reference is divided into three parts: the Environmental World, the Physical World and the Political World. Users can see charts and graphs of the data, and the Atlas also includes video and photographs of events and places on our fair planet.

It is priced at £64.99. Electronic Arts, 0753 549 442. InfoLine No.226

Ultimate Screen-Saver Collection

The Complete After Dark Collection on CD-ROM includes After Dark 3.0, More After Dark and After Dark 2.0.

The After Dark screen saver features an extra 30 displays and sounds including the Classic Fish and Flying Toaster.

As well as the After Dark volumes, users have access to other screen savers including Star Trek: The New Generation;Star Trek: The Screen Saver; Star Trek Screen Posters; The Simpsons; The X-Men; and Marvel Screen Posters. All the modules are shown through a multimedia preview tour, and can be unlocked by paying by credit card over the phone.

The Ultimate Screen-Saver Collection costs £49.99.

Instant Access International, 081 205 2596. InfoLine No.228

Manchester United Interactive – the 1994 Champions CD-ROM

As if the market isn't saturated with Ryan Giggs paraphernalia already, VCI software has announced Manchester United Interactive – the 1994 Champions CD-ROM. Unlike the duvet covers and posters of the attractive forward(?), this CD is for the serious Man-chester United fan. It contains over 500 photos, more than 75 video clips and player sound-bites from United's 1993-94 season.

There are match statistics for each game, including European Cup, League and both domestic Cups; info on every first-team player; complete league tables; and to test all this knowledge, a host of trivia questions.

VCI Software, 0923 255 558. InfoLine No.239

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Your eyes will tell you - Hitachi's new range of monitors takes image quality and user comfort to new levels.

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Your eyes will appreciate Hitachi's natural colours, which avoid the tiring harshness of some other monitors. They will also enjoy the crispness produced by the fine horizontal pitch of Hitachi's famous tri-dot shadow mask - 0.225mm is finer than any equivalent grill type mask.

Of course, all Hitachi's monitors, from 15" to 21", comply fully with MPR-II and other ergonomic and safety standards. And when the power management system blanks the screen they are still good to look at!

To see details of a new generation of monitors, freephone or fax now - your eyes will appreciate the difference.

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Three-D £1199 RRP The most powerful 3D animation system available for the Mac. Animate unlimited cameras, light sources and objects - including 3D morphs - and render up to broadcast quality. Supports RenderMan.

Swivel-3D Pro £599 RRP Easy to use modeller that's ideal for quickly getting started in the world of 3D. Inclusion of animation facilities makes this the one stop solution for the regular user. Supports RenderMan.

VideoFusion £549 RRP The ultimate QuickTime video effects engine. From simple editing and wipes through to complex moving morphs, VideoFusion does it all, right up to broadcast quality.

MediaMaker £649 RRP Analogue video editing and media sequencing made easy. Control QuickTime movies, graphics, sound and consumer video equipment to make low cost video productions.

SoundEdit Pro £269 RRP The most popular sound editing software available. Edit, mix and apply effects to Mac audio. Compatible with software such as Director, Action! and MediaMaker.

ClipMedia £229 RRP If you're not an artist, composer or animator, don't worry: ClipMedia II has hundreds of professionally created clips on a CD-ROM.

Action! £109 RRP The simplest way to make instant multimedia business presentations. Supplied templates ensure professional results from day one.

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ClipMedia

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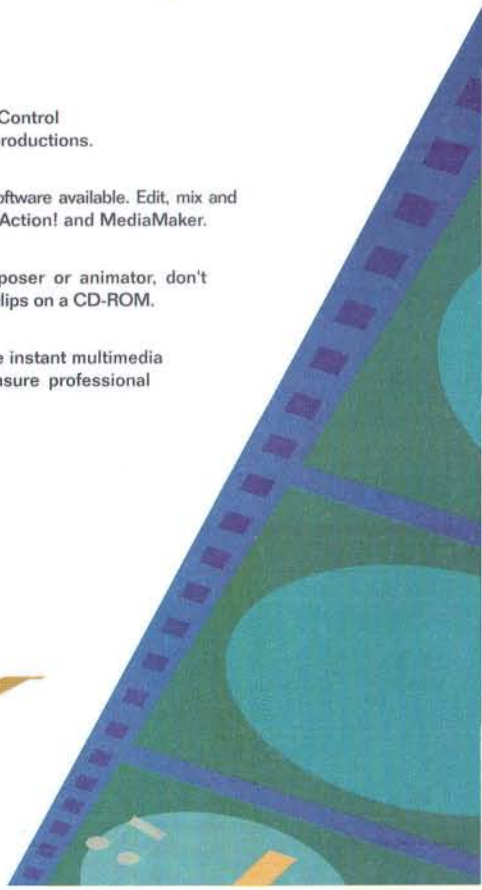

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Exploring eWorld

I agree with Steven Levy's initial reaction to eWorld. If the Town Square metaphor had been continued past the facades of the buildings then I could have said that I too found myself wandering through empty rooms. I was also disappointed by the columns of ugly text which I had hoped eWorld was here to save us from.

I had expected to click the button and find myself experiencing "cyberspace" (and finding out what it is?) but it took me a few tentative visits (especially as – unlike Steven Levy – I was paying for the pleasure) to find other people.

I had expected a lot more interactivity, I thought that going to the Info Booth I would find a helpful receptionist in a cheerful uniform rather than ugly lines of text with cobwebs on. Asking a question was a bit like sending a message in a bottle, never knowing when or even if anyone would read it.

I also experienced a curious time disorientation entering eWorld - no 'clocks' seemed to tell the right time due to the various time zones.

Although visiting eWorld seemed a world without time or other people I am prepared to give it the benefit of the doubt.

According to Steven there are basically 4 problems:
1 Lack of things to do (I am prepared to wait for a while).
2 The eWorld Thought Police (not a problem for me yet).
3 Costs (always a problem - I agree that more free time would be good).
4 Some business disagreements about how and when to launch eWorld.

The opponents of eWorld are Sonic the Hedgehog and MTV. That is how I see myself and my children using it. I am not interested in 'surfing the internet' I just want to play with the computer and see what I can do.

I think we have all learnt from the DOS/Mac war that the way forward is not CompuServe's obscure command line, but Mac OS/Windows and Apple's approach to the Internet seems similarly obvious to me.

Of course they have a long way to go. There are not enough people or services, and those services that are there are not interactive or exciting enough.

Philip Stankus via eWorld

PS The Kid n Teen Tawk News gets 9 out of 10 for presentation effort!

I have very mixed feelings about eWorld at the moment. For my money Apple needs to do two things quickly:
1 Provide a much greater range of Internet services.
2 Greatly expand the number of companies providing technical support.

Agreed that eWorld needs more people – but those users will only come when there are services to attract them.

And to be fair to CompuServe, it's MacCIM software makes it a lot friendlier.

SoHo ho-hum

Apple is targetting the SoHo (small office, home office) market, we're told. Well, that's me, small office, and it's at home. My Mac is a serious Mac, not because it's a high speed PowerMac with loads of RAM and gigabytes of hard disk (I wish!), but because it contributes significantly towards my livelihood.

I need a big monitor, but I can't afford the space (or the money) for a colour job so it's mono. Works fine - until I try to use my CD-ROM drive.

Even the junk promotional handouts won't run without colour. I can't even read Kimtec's catalogue CD-ROM without a colour monitor.

I also have a mono printer. The printer driver knows it's mono, so it promptly defaults to greyscale. As I recall, one of the recent Laserwriter drivers did something similar. Since some files contain colour, I have to manually switch off greyscale every time I print, otherwise it comes out muddy grey. Thanks, HP.

I don't need colour for purchase orders. Or letters. Or proof text. Or technical drawings. Or invoices (although red might be handy occasionally).

Colour seems to be the Holy Grail of software, hardware and junkware vendors alike. Acres of hard disk space are lost as successive upgrades include (obligatory) colour support. And my RAM is shrinking at the same rate. Colour is nice, but many small businesses don't need it, and don't like paying for something they don't need.

Malcolm Bebb via Internet

Russian revisited

In *Macworld* (December 1994) Gordon Howell describes his problems in trying to obtain a keyboard layout for the Cyrillic font.

I recently faced a similar problem and can possibly point Gordon in the correct direction. I purchased a machine for home use and although I use English, my wife teaches modern Greek and wanted to be able to type Greek.

A Greek font and an appropriate keyboard layout were needed. It does require some messing about with that infamous utility ResEdit and the acquisition of a free Control Panel.

ResEdit is needed to add a particular resource to the System file. Modifying this can be dangerous, so it is advisable to take a copy and modify that.

The procedure is as follows: launch ResEdit, open the System file (or its copy!); a window full of icons representing the resources appears; double click on the KCHR resource; a list of resources appears (on mine I get resource #0 "U.S" and #2 "British" representing the possible keyboard layouts); duplicate one of these and give it a unique number and name; double click on this one and, at last, up comes an interesting display showing a keyboard and a table of the character set; select a font (ie, the Cyrillic one) and start allocating characters to the keyboard (you can design your own layout!). Unfortunately I forget the details of how to do this but a little experimentation should be sufficient; I think you simply drag characters onto the keyboard from the table.

When all this has been carried out, this modified version of System is in the System Folder and is in use, the control panel 'Keyboard' should display the available keyboard layouts for selection.

One additional control panel can make life easier at this stage. I obtained, I forget from whom, a control panel called 'Keyboard Switcher' which places an icon in the MenuBar from which a menu is available so that the current keyboard can be selected at any time. This is a free piece of software written by James W Walker, University of S Carolina (Internet 76367.2271@compuserve.com).

I hope Gordon has the courage to try or has a helper at hand.

Keith Tizzard via Internet

PS Your letters page invites contributions by 'e-mail, fax and bits of ink-covered paper'. Unfortunately I could not find your Internet email address in the magazine. Fortunately, I remembered that you had written about email in your editorial last month and that included your address.

Please publish it every month.

Apologies for the omission of an Internet address. I can be reached at pworlock@cix.compulink.co.uk, or AppleLink (macworld.uk) and eWorld (Pete.W) can accept Internet mail, too.

From next month we'll be offering a great reward for the Letter of the Month. What is it? You'll have to wait and see – or better still, write today and be in with a chance of becoming the first winner.

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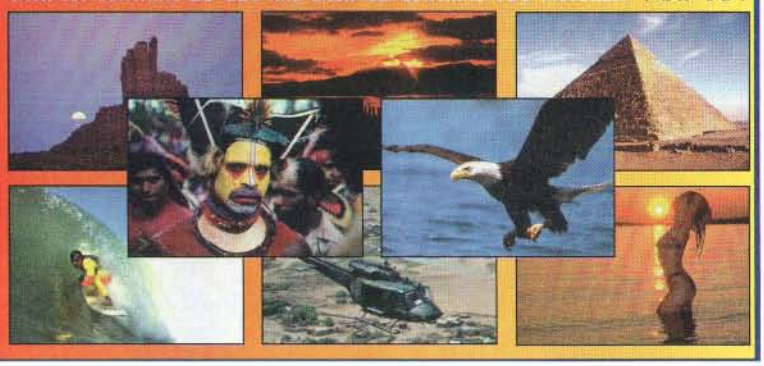

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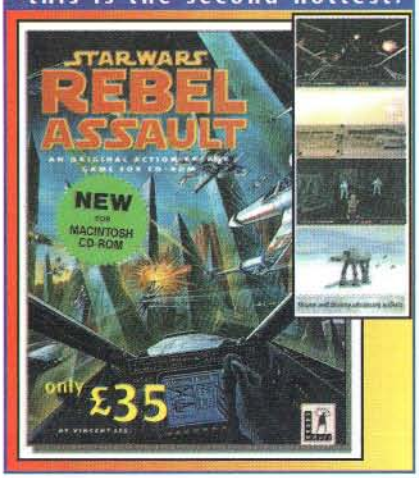

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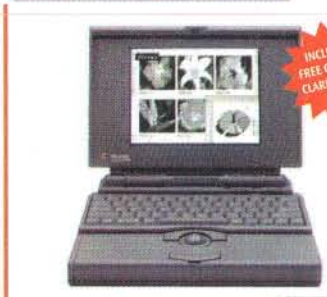

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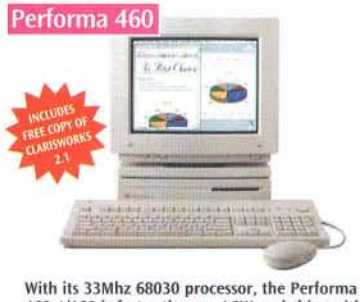

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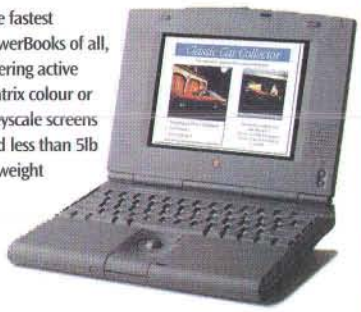

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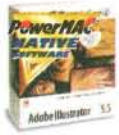

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✪✪✪✪✪ Excellent ✪✪✪✪ Very good ✪✪✪ Good ✪✪ Average ✪ Poor

Painting software

Painter 3.0

Publisher: Fractal Design
Distributor: Letraset (0171 928 3411)
List price: £375
Pros: Even more painting tools than earlier versions; unique 'image hose' tool; good layering system; QuickTime capabilities; miles ahead of any other painting software.
Cons: Sheer weight of features can be confusing for beginners; very nasty text tool.
Macworld rating: ✪✪✪✪

It's becoming something of a calendar fixture that Fractal Design releases a periodic upgrade to Painter, amazes all its users with the scope and depth of new features, and sweeps up all the awards.

And so it is with version 3.0: again, we have unbelievably accurate representations of real-world painting tools; once more, there is an increased level of flexibility to make each brushstroke and the final image look exactly as you wish; and inevitably, there are the new additions that perform fabulous tricks that broaden Painter's overall capabilities.

Milking the Floaters

For Painter 3.0, Fractal Design has closed the gap with Adobe Photoshop 3.0 (reviewed, *Macworld*, October 1994), making Painter as much of a photo-retouching and montage program as it is a tool for creating original artwork.

One of the big selling-points of Photoshop 3.0 is its ability to work in layers, so you can modify elements of an image and montage them together without setting your ideas in stone. In fact, Photoshop was not the first out of the trap with the idea: Painter has been able to do this for a while, although it was not widely appreciated as it was built into the Painter X2 extra-cost addition which may have been missed by many Painter 2.0 users.

With Painter 3.0, the X2 features have been improved and put into the main program. The layers (called 'Floaters' in Painter parlance) now work like this: whenever you make a selection in Painter using the lasso, marquee or new bézier pen, the program saves it as a named path, so you can deselect it and then select it again at any time.

If you then make the path 'float' above the image by dragging it or copy-pasting it, the selection becomes a Floater. Each Floater has a name, and you can drag them around the image without affecting the pixels underneath the Floater; in this respect, they are just like Photoshop layers – you can even adjust the anti-aliased edges, masking characteristics and transparency settings of each Floater. You can choose to paint inside a Floater, or paint on the background and leave the Floaters intact.

In addition, any Floater can be dragged into a Floater Library so that it can be used at a later date. In effect, this gives you an excellent clip-art resource, with each image having perfect anti-aliased edges and even, for added realism, a semi-transparent drop shadow.

While Floaters are one of the most useful features of Painter 3.0, perhaps the most startling new addition is the Image Hose tool.

Most Painter brushes paint with a single group of colours or, with cloning tools, take their colour from an underlying image. In contrast, the Image Hose paints by using a series of images saved as floaters in a Painter file.

In this way, you can fire a set of images onto the canvas to build up a pattern in a very short time. As each image is made from a Floater, it is anti-aliased and drop-shadowed, resulting in a very realistic finish.

Special credit should go to Fractal Design for not only coming up with the image hose, but for implementing it so well. The tool works extremely quickly, with none of the delays that are associated with some of Painter's more complex brushes.

Painter comes with a number of Image Hose 'nozzles' on the CD that ships with the program, although these images are unlikely to be exactly what you'll need in the real world.

Making your own nozzles can be laborious, as you need to cut out and float each image you want to use, put all of the Floaters into a single image, and then save them as a nozzle file. Nevertheless, the potential of the Image Hose is huge, cutting down considerably on the time it takes to paint a patterned area.

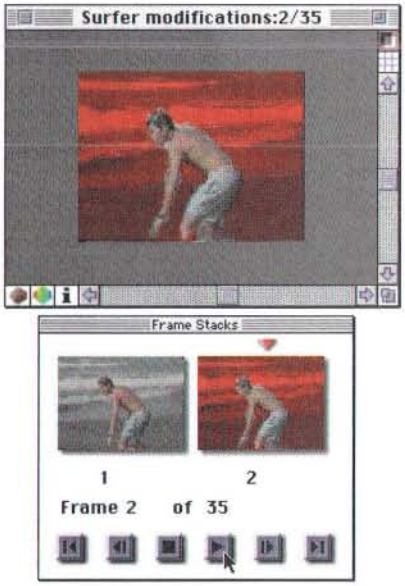
For example, if you save a set of leaves as a nozzle, you can then spray a host of leaves onto the canvas to build up very convincing foliage; use pebbles, and you have a river-bed; or use coins and you have, well, a whole load of coins. While the Image Hose is not much use for the main part of your image, as a background-creator it is unbeatable.

Frame by frame

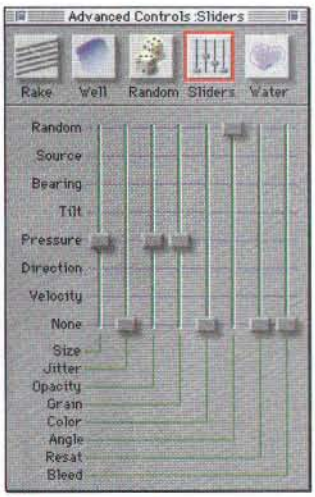
Another unique feature of Painter 3.0 is its ability to deal with images as a 'Frame Stack'. Frame Stack files hold a number of images, each of the same size, and you can view a number of the images in the stack simultaneously in a special window. One of the images is shown in the main Painter drawing area, which can also be used to run the images in sequence.

Of course, a natural application for Frame Stacks is QuickTime movies. Painter 3.0 can open any QuickTime file, let you edit each frame using any Painter tool, and then save the file either as a new movie or as a set of numbered PICT files. While editing QuickTime movies is a major application of the

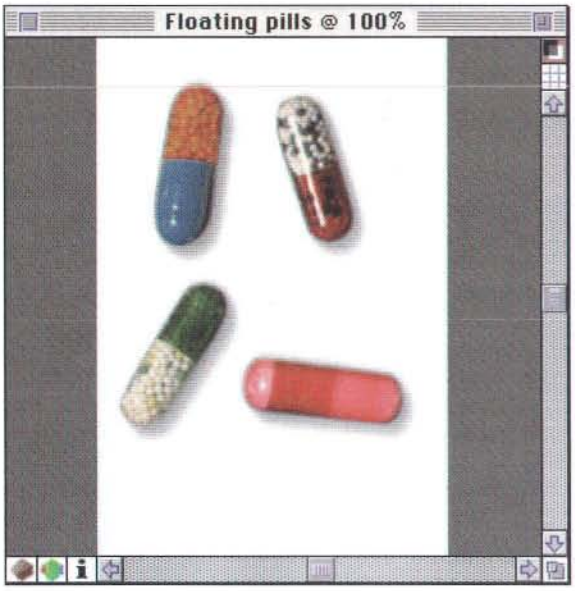
continues page 44



Being framed
Editing QuickTime movies frame-by-frame is made simple in Painter 3.0. You can even use the software to create original animations at speed.



Sliding around
Never let it be said that Painter 3.0 doesn't let you pick your effects. With seven different levels of fine-tuning on the Sliders palette alone, you can match any brush to real-world tools.

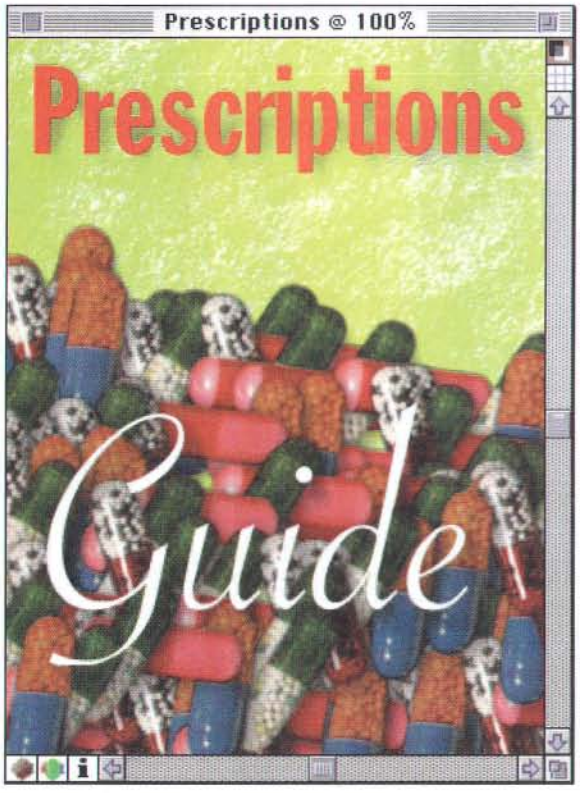


Hosing down
Making an Image Hose nozzle is simple, but time-consuming.

(above)
First, you create a set of Floaters of all the images you want to be in the nozzle.

(left)
Next, you group them together and save them as a nozzle file.

(below)
Finally, you use the nozzle with the Image Hose tool to spray your set of Floaters into a new picture.



feature, more interesting is the potential use of Fractal Painter's unparalleled painting tools to create original animations.

With such capabilities, Painter 3.0 is likely to become as indispensable to desktop movie-makers as it will unquestionably be to those working in the graphic arts.

Fractal Design has incorporated many changes to the basic Painter interface for version 3.0.

From its entry-level painting program, Dabbler, it has brought in the 'desk drawer' metaphor, where you keep your frequently-used tools to hand and delve into a separate area for tools you use less often. (This is a mixed blessing, as you occasionally don't know where to pick up a tool – from the drawer, or from the frequent-access area.)

There are far more floating palettes than before, mainly reflecting the increased levels of control you have over the look-and-feel of each tool.

For example, the Advanced Controls palette features most of the stuff that only the experienced users will want to get involved with, such as fine-tuning the effects of pen pressure, dealing with how colours interact with what is already on the canvas, and determining how randomly to put down variations in a brushstroke.

The new interface can become cluttered at times, populated as it is with so many floating palettes. The drop in ease-of-use that this will mean for beginners is in some way mitigated by the extra speed that has been added to the program, so even if you need to hunt around for things at first, the chances are that you'll be able to complete a job just as quickly as before. In particular, Painter 3.0 has much faster (and automatic) brush-building.

The Last Word

With all of the new additions supplementing the undoubted genius of Painter's underlying tools and capabilities, version 3.0 should once again prove to be more than a match for its competitors – indeed, it's so accomplished that it barely has any competitors, especially at this price.

Suffice to say, if you're in need of painting software that goes beyond the basics, have a fast machine and (ideally) a pressure-sensitive drawing tablet, then there is no better software. And even if you only deal with bitmapped artwork occasionally, or just enjoy doodling, Painter will be a worthwhile purchase – it's easily in the top five Mac applications, in any discipline. **– Ian Winter**

Spreadsheet

Microsoft Excel 5.0

Publisher: Microsoft
0734 270000.
List price: £260
Pros: New power features include Pivot Tables and Trendlines; Tip Wizard and Function Wizard.
Cons: Egregious resource hog.
Macworld rating: ✪✪✪✪

Version five of Excel is here at last! Fork over your money, clean the old files off your hard drive, find a quiet hour or so for installation and start exploring.

Excel 5, like Microsoft Word, is the product of the design philosophy of Microsoft chief software architect Charles Simonyi.

The philosophy, crudely paraphrased, is, "We find out what features people want and we program them. We don't optimize or fine-tune unless absolutely necessary, since that takes too long and the chip makers take care of our performance problems eventually. Processors get faster, memory gets cheaper and we want to get products out the door now."

Thus, Microsoft is producing software with stunningly rich feature sets and jaw-dropping resource requirements. The Power Macintosh version of Excel takes nearly 30MB of hard drive space and needs 24MB of memory to run comfortably (there's not much point running a program on a RISC processor and forcing it to use virtual memory).

You can't run Excel 5 at all on a Plus, Classic, or SE (it takes a 68020 processor or higher), and it's very difficult to see how a IIsi, for example, could be upgraded to be a useful Excel 5 box.

If you strip System 7 down to its shorts (a bit under 2MB), you can get a minimal Excel to run in 4MB – good news for owners of stock PowerBooks, but you will have only a few KB left for files.

Everything you could want

On a 680X0 Mac, realistically figure on 8MB of memory and 25MB of free disk space for a happy installation experience.

There's a wonderland of new features in all this expanse. Microsoft is delivering the software of tomorrow,

but it may need the hardware of tomorrow.

Pivot tables are powerful and nicely implemented. You can take any table of data in which pieces of information are arranged by categories (for example, sales data by Region, by Month, by Product) and make a table in which categories are either row or column labels that you can switch simply by dragging them across the table.

Trendlines are also a shortcut to analytical power. If you select a set of points in an Excel chart (just click on the points), you can pick Trendline from the Insert menu. This gives you options from plain linear regression to data smoothing to complicated curve-fitting – almost the whole range of possible statistical analyses is packaged here as a set of convenient dialogue-box choices.

The old Excel macro language is still recognized, somewhat, but Excel macros are now automatically recorded in Microsoft's Visual Basic. Version 5 can run version 4 macros, as long as the macros don't look for functions or menu items that have changed.

I've run dozens of shareware Excel 4 templates and macros under version 5 with no trouble, but developers with more ambitious programs report loads of problems.

Ultimately, developers working with Excel will probably just rewrite their work in Visual Basic. A Visual Basic macro is easy to edit, and the language lets you write clear programming statements. Because applications in Visual Basic are automatically cross-platform to Windows, and because writing in Visual Basic inside Excel lets you concentrate on functional details and leave the interface details to the environment, you can expect technical- and financial-application add-ins for Excel 5 over the next year.

Finally, the other important new power feature is simply that the default file for Excel 5 is the Workbook, a set of grouped worksheets (you decide the number of worksheets per Workbook).

This greatly simplifies constructing three-dimensional data tables (which can also be used in pivot tables) and makes it much easier to organize projects.

The Wizards in this version of Excel are necessities rather than conveniences. The Tip Wizard, a chatty little backseat driver at the top of the screen, points out features you could have used, based on your last selections. The Function Wizard now provides, in effect, a tutorial on functions and the arguments you must enter for the correct results. ToolTips, a sort of Balloon Help that explains the functions of the vast array of buttons, is available if you pause the cursor over a particular button. Since the feature scope of Excel 5 now fits awkwardly in the traditional Mac dialogue box, formatting and settings dialogue boxes now sport tabs (like the ones on file folders), that are used to group options into easy-to-reach sections.

The shipping version of Excel 5 (compared with the many beta versions) shows acceptable recalc times on 680X0 Macs – the times on a Quadra 610 are remarkably similar to the recalc times, for the same worksheet, for Excel 2.2 on a IIcx (I've been doing this a long time). The Power Mac version on a 6100 with 24MB of memory performed seven to eight times as fast as the 680X0 version on a Quadra 610.

At present, the recalc speed champion on the Power Mac is the spreadsheet in ClarisWorks' Power Mac version, 2.1, which lacks many of Excel's features, but which nonetheless represents a real alternative to Excel, especially for users who bought the standard configuration of 8MB of memory. In Microsoft's view, tweaking recalc times in seconds is not the issue – getting better-looking reports and better data analysis on a timescale of days is what's important. The main performance complaint arises from sheer bulk – on older machines with slow hard drives, Excel 5's bigger size means start-up times are annoyingly slow.

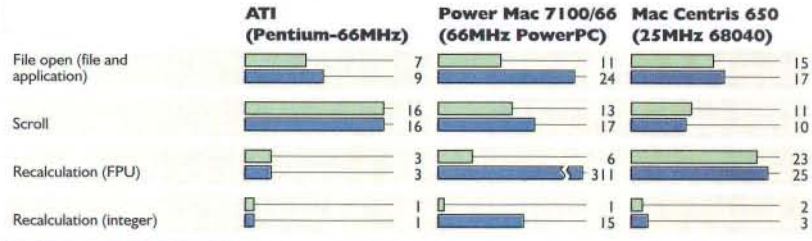
Microsoft is testing the philosophical proposition that the only way to make software better is to add features, not to simplify. For example, look at the in-cell editing capabilities ("rich cell editing" in Microsoft-speak). Not only can you resize individual cells to fit any text, but you can edit the text in cells character by character.

Each text-containing cell in Excel 5 is for all practical purposes now the equivalent of a page in the original MacWrite – you could use Excel as your word processor for small tasks! Capabilities like this certainly expand code size.

How fast is Excel 5.0?

Times are in seconds. Shorter bars are better.

Excel 5.0 (all applications native to their respective platforms)
Excel 4.0 (in emulated mode on the Power Mac)

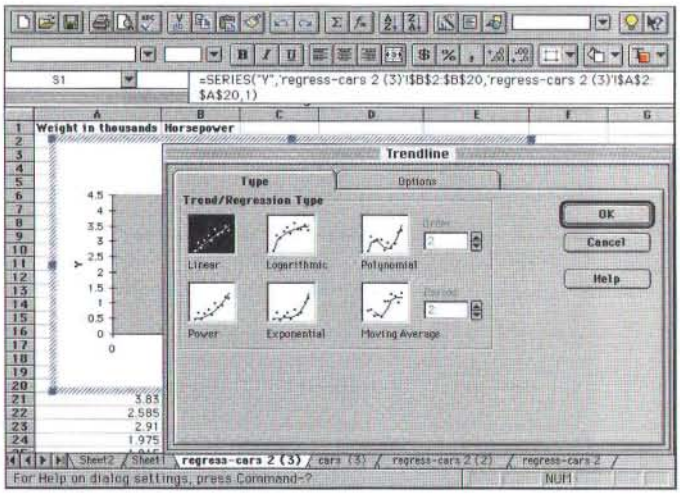


BEHIND OUR TESTS

The Macworld Lab and PC World Test Centre collaborated to measure Excel's performance. We used a 987K file for the FPU tests and an 891K file for the integer tests. We configured the computers as follows. Centris 650: 25MHz 68040, 16-bit video (640 x 480), 16MB of RAM, and standard System 7.1. Power Mac 7100: 66MHz PowerPC CPU, 16-bit video (640 x 480), 24MB of RAM, and standard System 7.1. ATI: 66MHz Pentium, 16-bit video (1024 x 768), 24MB of RAM, 256K L2 cache, 2MB of video RAM, DOS 6.22, and Windows 3.11. **– PC World Test Centre testing supervised by Susan Silvius; Macworld Lab testing supervised by Lauren Black**

REVIEWS

Another reason Excel 5 is big is that many capabilities are implemented inefficiently. The Analysis Tool Pak Add-In, which offers a modest set of statistical routines that work inside Excel, takes 729K as a separate module. In contrast, the stand-alone statistics application DataDesk 4 manages to fit a huge range of capabilities, including rotating 3D graphs, notebooks, and dozens of advanced functions, into 900K.

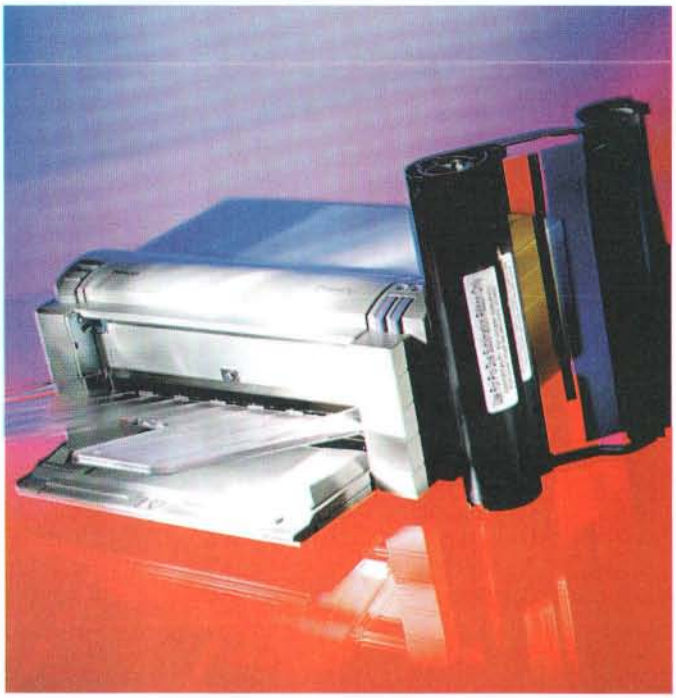


Trendy
Sophisticated regression capabilities are now built into the charting section of Excel.

The Tool Pak routines would take about 60K in the hands of DataDesk's programmers. Besides this, there's a terrifying level of redundancy. I counted seven different ways (functions, menu commands, add-in features) to perform the same linear regression analysis.

The Last Word

Excel 5 is a relentlessly complete tool kit for analyzing numbers. That means it's huge, but recalc performance on midrange and low-end machines is still acceptable. Nonetheless, it's the fanciest spreadsheet and the choice for serious business work. **– Charles Seiter**



REVIEWS

Colour printer

PrimeraPro

Manufacturer: Fargo Electronics
Distributor: Bannerbridge, 0268 419101
List price: £1,649
Pros: Excellent output for its price range.
Cons: Extremely slow for photo-realistic output; relatively high cost of consumables.
Macworld rating: ✪✪✪

Fargo Electronics' Primera was the first inexpensive, personal colour printer to support both dye-sublimation and thermal-wax printing, but its output was mediocre and it took forever to print.

The new PrimeraPro is a vast improvement over its predecessor. It's still slow, but now the printout is worth waiting for.

Like the earlier model, the PrimeraPro uses a single print head for both thermal-wax transfer and dye-sublimation jobs, but the new print head is more sophisticated, with control circuitry that allows it to operate much faster and with greater precision.

The page-setup box lets you specify the type of output you need – three- or four-colour thermal wax, black-&-white, or colour photo-realistic dye sub.

For photo-realistic output, the PrimeraPro comes with a dye-sublimation kit that includes a ribbon tray and a ribbon good for ten printouts – just enough to whet your colour appetite.

To switch from dye sub to thermal wax for faster printing and typical business colour printing, you swap ribbon trays and reload the printer with thermal-wax paper.

Output Improvements

The PrimeraPro's biggest advancement over its less-expensive sibling is in the quality of the dye-sublimation output.

The original Primera maxes out at 203dpi, which is far from desirable. The PrimeraPro features a high-quality mode of 600dpi by 300dpi, a regular mode of 300dpi by 300dpi, and a draft mode of 72dpi by 72dpi.

Most of the artifacts associated with the 203dpi version, such as posterization and banding, are gone. Although on close examination I could see some banding and dithering, particularly in the highlight areas, the PrimeraPro's dye-sub output is far better than that of any ink-jet or thermal-wax printer at this price.

The 600-by-300-dpi thermal-wax output is also quite impressive, but the printer's main selling point is definitely its photo-realistic dye-sub capability. To date I have seen no other printer under £2,000 that matches it.

During my test runs, I encountered a couple of printer errors (the system couldn't find the printer), but powering the printer off and then on again solved the problem. Fargo's excellent tech-support department should be able to solve any problems you run into and quickly get you going again.

Mission critical

Fargo promotes the printer for proofing, so Macworld Lab looked at the different colour-correction schemes that came with the printer to see how closely colours on a film proof matched those on the monitor.

If your only concern is to match your output colours with the colours you see on the monitor, Fargo's gamma-correction scheme or Fargo-Match (the company's proprietary colour-matching scheme) will handle the job properly. The printouts' colours, however, were less saturated than those of the film proof.

Tinkering with the settings in the dialogue box didn't get the printout to match correctly. If your colour-matching needs are critical, consider the far more expensive (£8,000) SuperMac ProofPositive with the EFI colour-management scheme. The PrimeraPro's PostScript Level 2 option (a must if you print from graphics and layout programs), which should be available by the time you read this, will take advantage of device-independent colour to achieve better colour fidelity.

Speed is the PrimeraPro's main weakness. In dye-sublimation mode, the PrimeraPro is one of the slowest dye-sublimation printers Macworld Lab has ever tested.

A 7MB Photoshop file (6 inches by 9 inches, 200 dpi) took 15 minutes for one pass of colour, compared with less than 7 minutes on a Tektronix Phaser IISDX.

Also, since all the rasterization takes place on the Macintosh, print speed depends on your processor. Fargo recommends a minimum system of a Centris with 8MB of memory and 20MB of hard drive space. (Unfortunately, a Power Macintosh won't help until Fargo writes native drivers.) Fargo expects to have an Adobe Photoshop export module early next year, which should cut the printing time down by at least a third.

On the other hand, the PrimeraPro is one of the fastest thermal-wax printers Macworld Lab has tested.

In thermal-wax mode the same 7MB Photoshop file took only about four minutes to print. However, my Lab co-workers were annoyed to learn that this small printer is as noisy as a printer two to three times its size.

As with owning a Polaroid instant camera, most of your expenditures go to consumables. An 8½-by-11-inch printout costs about £2.50 – a lot for a printer of this price and capability. Thermal-wax printing is a lot cheaper – around 40 to 45 pence, depending on paper quality. If you print many iterations before making a decision, it's faster and more economical to hold off on a dye-sub printout until you're sure.

Other options available from Fargo: an iron-on-transfer kit and a 4-by-5-inch glossy photographic paper stock that, at 90 pence per print, produces output worthy of your photo album.

The Last Word

Having two print technologies available from a single printer is handy, and the Fargo PrimeraPro's photo-realistic output definitely beats that of any other printer in this price range.

But with the higher-cost consumables and the slow print time, the Primera–Pro is best suited for routine thermal-wax use and occasional dye-sub work. – **Mark Hurlow**

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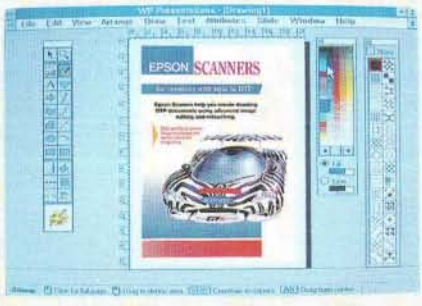

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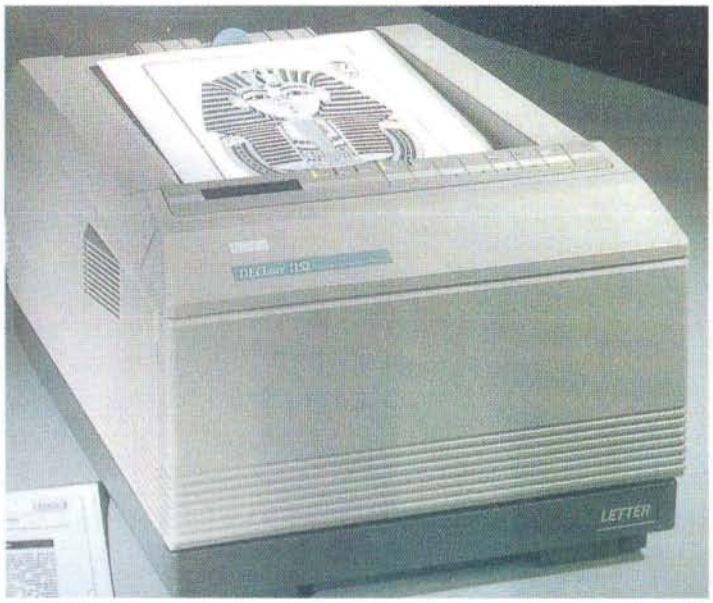
Choosing the right laser

Digital's DEClaser 1152



The DEClaser 1152 provides superb quality and performance at an affordable price, and will meet the needs of most single users or small workgroups.

Digital DEClaser 1152

The bestselling DEClaser 1152 makes 300 dpi PostScript laser printing more affordable...

Buying a PostScript printer has never been easier on the wallet. But in every other respect, choosing a printer is more complex than ever. It used to be relatively easy to base a purchase decision on cost and speed alone: But that's all changed. Although cost and speed are still important factors, they're no longer the only issues. Output quality, interfaces, paper–handling, networkability, duty cycles, and warranty/support structures together with cost and speed now decide the choice.

1152 meets all the criteria

The Declaser 1152 is the very latest in a long line of innovative products to come from technological giant Digital Equipment Corp. The 300 x 300 dpi, four–pages–per–minute printer is priced at £599. Aimed at individual users and small workgroups looking for an inexpensive PostScript laser printer, the DEClaser 1152 offers a number of features not found in competing, pricier models.

Multi–platform capabilities

The printer is powered by a high–speed Motorola 68000 series processor and has 2 Mbytes of RAM on board (expandable to 4Mbytes). It features Adobe Systems Inc.'s PostScript Level 2 and has simultaneously active LocalTalk, serial and parallel interface ports. Unlike any of its competitors, the DEClaser 1152 has an additional serial 'B' interface for connection to DEC LAT systems.

The feature that makes the DEClaser 1152 standout is it's ability to handle print jobs from multiple sources. The printer automatically senses where each print job is coming from and queues them for printing.

Reliable Canon technology

The Declaser 1152 uses the Canon LX laser engine that has proven reliability and quality. The toner cartridge has an estimated life of 5,000 pages (with 5% coverage).

The combination of a fast micro-processor, PostScript Level 2 and an optimised Canon engine helps the DEClaser 1152 work its way through complicated documents containing graphics and multiple typefaces at a very acceptable speed.

Other considerations...

PostScript Level 2 is fully compatible with PostScript Level 1, Macintosh™ PC systems, UNIX workstations and environments such as Windows™, OS/2 and Novell are all fully supported. Consequently, because the DEClaser 1152 has 'active' interface ports, there is ensured investment protection for today's operating systems, with a guarantee of future compatibility.

When three information technology leaders, Canon, Adobe and Digital put their heads together then what follows can be guaranteed to be innovative, reliable and of the highest quality. With that in mind it is worth noting that the DEClaser 1152 can be further enhanced with the addition of more memory (RAM) and an extra 250 sheet paper tray. Digital also fully support this innovative market leading laser printer, by providing 12 months on–site warranty for all users. For just £599, this is the BEST value multi-platform Adobe PostScript Level 2 Laser printer available in today's market.

The DEClaser 1152 is available from all good dealers, including:

Jigsaw
Tel: 0602-422 990

Fairhurst Instruments
Tel: 0625-525 694

AppleCentre Newcastle
Tel: 0661-825 515

KRCS Group
Tel: 071-248 1525

BDCS
Tel: 081-795 0971

Trams
Tel: 071-630 5858

ApplePoint Sterling
Tel: 071-935 5262

Litho Supplies
Tel: 0527-570 101

MACWORLD MW EDITORS' CHOICE Bottom Line Pick

The Digital DEClaser 1152 printer range is available at all good Apple Dealers, for further information or to find out the name of a dealer in your area, telephone DirekTek Distribution Ltd. on 081–845 5969 or fax 081–845 8586.

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Microsoft Works 4.0

Publisher: Microsoft Corporation
0734 270000
List price: £120
Pros: Inexpensive; good word processing and drawing tools; includes calendar and address-book components.
Cons: Weak spreadsheet and database modules; can't format tables in word processor.
Macworld rating: ✪✪✪

At last, after a serious up-date, Microsoft Works is starting to look the way it should. With the release of version 4.0, what was a poorly designed, overpriced integrated works program becomes a sensible, low-cost package.

It provides entry-level users with a respectable word processor, database, and spreadsheet, along with drawing and communications tools, for the attractive price of a little more than £100.

And, while trimming the price, Microsoft has enhanced Works 4.0 with plenty of new features, including a built-in calendar, an address book, and a slide-show module – features missing in many other all-in-one works packages.

New and improved

All of the existing Works modules have been improved, some dramatically. The word processor is most noticeably made over, acquiring a fast, efficient spelling checker, a thesaurus, and a straightforward table-making tool.

A zoom command has been added so you can view a page layout at magnifications of 25 per cent to 800 per cent. A new tool bar makes formatting commands available via pop-up menus.

There's also more assistance online. The WorksWizards, for example, provide step-by-step guidance for creating items such as greeting cards, certificates, and newsletters in a variety of styles. The program also ships with a folderful of AutoStart Stationery templates for new documents.

These features make the Works word processor much easier to use, but it's still a very basic word processor at best. For example, you can add bullets to a series of paragraphs with a single click, but you can't customize the type of bullets used. You can insert a table into a document, but you can't change the colour and width of grid lines or shade the table cells. And the module also contains a few odd inconsistencies. Drag-&-drop text editing, supported in the word processor, inexplicably doesn't work within tables.

The program's drawing and painting modules have taken a substantial leap forward though. Objects can be drawn using a variety of shape tools, apply gradient fills, and rotate objects at any angle. You can enhance paint objects with a number of interesting effects, such as blur, emboss, and trace edges.

These image-processing commands let you do some creative manipulation of original or imported images within Works. Another little Works bonus: the drawing tools can be used to create PowerPoint-like slide shows. The slide-show setup features are bare-bones but fine for assembling simple on-screen presentations, albeit without any transitional effects.

The graphics tools are accessible on a floating tool palette from any of the modules, making it easy to integrate draw and paint objects. You can drop logos, charts or diagrams onto a page and then use the straight-forward text-wrap commands to make the text either wrap around the graphic elements or overlap them.

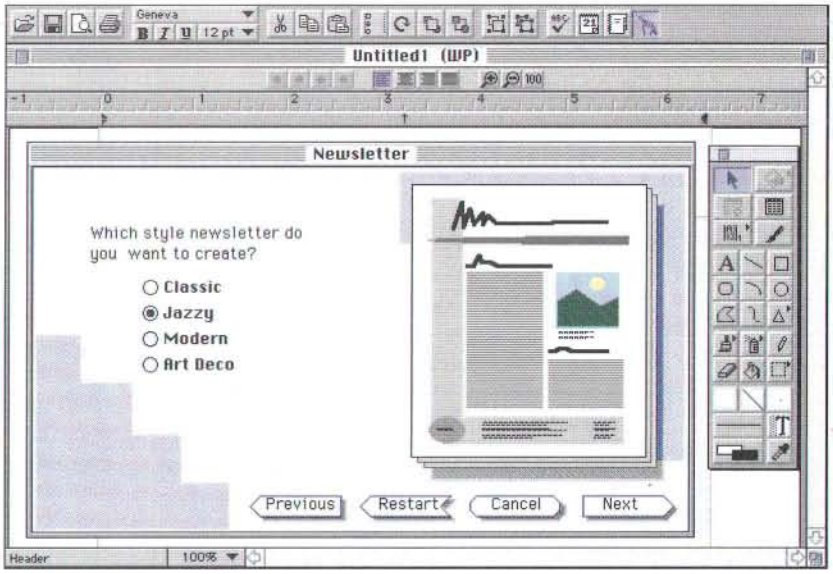
For more elaborate layouts, you can set text in individual text frames within a page (and across pages) and build links between frames as you would with a full-blown page-layout program.

Subtle changes

The database and spreadsheet modules are less improved, though they too have been upgraded. The database allows you to create multiple data-entry and -display forms, along with a fully customizable list view. A new field-placement dialogue box simplifies setting up new forms, and the reporting capabilities are improved.

You still have to enter data into each field through an entry bar at the top of the screen, spreadsheet-style, instead of directly in the field. And the zoom tool accessible in the word processor can't be used when designing a database.

The spreadsheet also still lacks a zoom function, so you can't reduce a large spreadsheet to get an overview of your work. Also, the spreadsheet-formatting commands are oddly implemented. If you select a cell and pick a different font, the entire spreadsheet changes to the new font. But if you pick a new colour or style, the change affects only the selected cell.



Off to see the Wizard
WorksWizards automate steps for creating popular items like cards, certificates and newsletters, as shown here. Answer the Wizard's questions and Works sets up a new document formatted to your specifications.

On the positive side, the spreadsheet supports a full range of standard functions and integrates nicely with the other modules in the program. For example, the Paste Special command makes it easy to embed a spreadsheet into a word processing document. Double-clicking on the embedded spreadsheet gives you instant access to the spreadsheet tools so you can edit the spreadsheet from within the word-processing document.

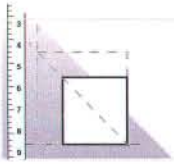
The Works telecommunications module is probably the least likely to be used (true for all works programs) but it, too, is enhanced. The module now supports a fuller range of file-transfer protocols, including Xmodem, Ymodem, Zmodem.

Other notable features include a status area that lets you display the date, time, and duration of a telecom session, or your online service charges; macros to automate dial-up and log-in sequences; and an option for preselecting an application to open downloaded text files.

In addition to the traditional works modules, Works 4.0 now includes its own calendar and address book. There's not much to the address book, just a database preset

continues page 50

Desktop Publishing software



QuarkXPress 3.31

Publisher: Quark
Distributor: Computers Unlimited, 081 200 8282.
List price: £995.
System requirements:
680X0 VERSION: 3MB of memory; System 6.0.5.
POWER MAC VERSION: Power Macintosh computer; System 7.1.2; CD-ROM drive.

The long-awaited native Power Macintosh version of QuarkXPress offers users a number of overall performance improvements. While tasks that are CPU-based are fast, Macworld Lab tests show that disk operations and printing are slower when using the Power Macintosh than when using the 680X0 version.

Macworld Lab performed several speed tests using a 611K real-world QuarkXPress file that contained several placed art images and a variety of fonts. We tested the time it took to save the document as a PostScript file, refresh the screen, and print the document.

We used a Power Macintosh 7100/66 with 24MB of RAM and a 250MB hard drive for the Power Mac tests, and a Centris 650 with the same configuration for the 680X0 tests.

Both computers were set to display thousands of colours from internal video. The appropriate current versions of Adobe Type Manager were installed on both Power Mac and 680X0 machines.

QuarkXPress 3.31

	Power Mac 7100/66	Centris 650
Save	34.2	25.9
Print	200.0	185.2
Redraw & Zoom	11.2	30.7

Times to perform operations (in seconds).

The Power Macintosh version's most significant performance advantage is its screen-refresh speed. Moreover, changing fonts in the native version is virtually instantaneous.

According to the company, saving a full-page graphic as an EPS file takes longer on the Power Macintosh because of emulation that occurs for I/O operations on Power Macintosh machines.

Similarly, printing a file is slower.

QuarkXPress users will find faster redrawing in the Power Mac version, but they'll have to wait for faster system software from Apple for the other speed improvements that might have been expected. – Joanna Pearlstein

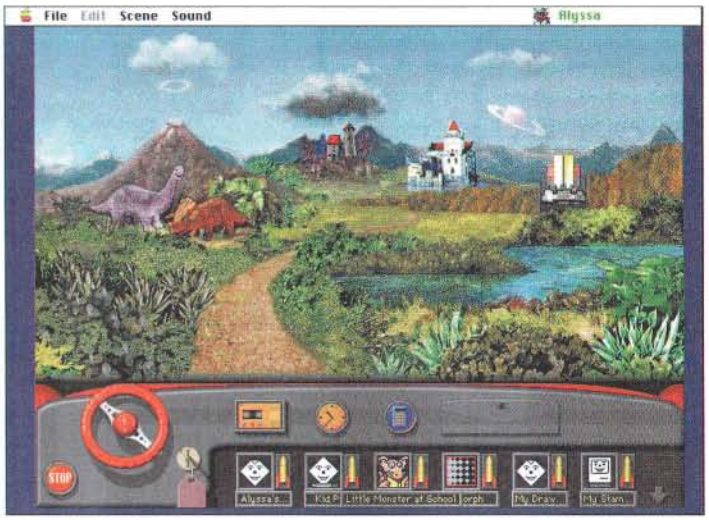
with the appropriate customizable fields for address listings.

The calendar is nicer, a simple but useful planner/organizer. It displays daily, monthly, and weekly views of your appointments, along with a list view for to-do items.

The Last Word

Despite all the forward steps, Microsoft Works 4.0 isn't the best integrated software package around; ClarisWorks still offers stronger individual tools and the best overall selection of features – though it costs a little more on the street and lacks a calendar program. But Microsoft Works offers so much at such a good price that it merits serious consideration.

Entry-level users looking for an all-in-one package at the best possible price won't be disappointed with it. – **Joseph Schorr**



Kid's-eye view
Children will always spill their Ribena on your new white carpet and smear chocolate on the sofa. But they needn't always start punching numbers into your spreadsheet cells and wiping out your highest score on Spectre Supreme. Launch pad lets kids use only the applications and documents that appear at the bottom of the screen.

Desktop for kids

Launch Pad 1.0

Publisher: Berkeley Systems
Distributor: Softline, 081 401 1234
List price: £39
Pros: Protects files from kids; customizes Mac according to child's age.
Cons: Alters System file; probably means you'll have even less time to play games on the Mac yourself.
Macworld rating: ✪✪✪✪

Launch Pad, from the maker of the popular After Dark screen saver, is a new utility that takes the worry out of sharing your Mac with kids.

Instead of the desktop, your child sees an animated puppy in a rocket-propelled car.

Clicking on his or her name at the bottom of the screen opens an account that lets the child access only the desk accessories, applications, and documents that you pre-select. Launch Pad also adjusts controls like mouse sensitivity and key repeat rate to suit your child's dexterity.

You can even tell Launch Pad to speak menu items and file names out loud, a boon for kids too young to read. For maximum protection, you can set Launch Pad to load automatically at start-up. Once it's running, you have to enter a password to exit Launch Pad – even hitting ⌘-option-escape doesn't force the program to quit.

The only drawback to Launch Pad's security is that the installer makes changes to your System file, which could lead to incompatibilities on some Macs.

With Launch Pad installed, extension managers such as Casady & Greene's Conflict Catcher no longer respond to the keyboard at start-up, although you can still turn them on and off from the Finder.

The Last Word

A few minor inconveniences are a small price to pay for peace of mind, though. If you want to share your Mac with your kids (and not worry that all your work will be scrambled next time you start it up), Launch Pad is a worthwhile investment. – **Franklin Tessler**

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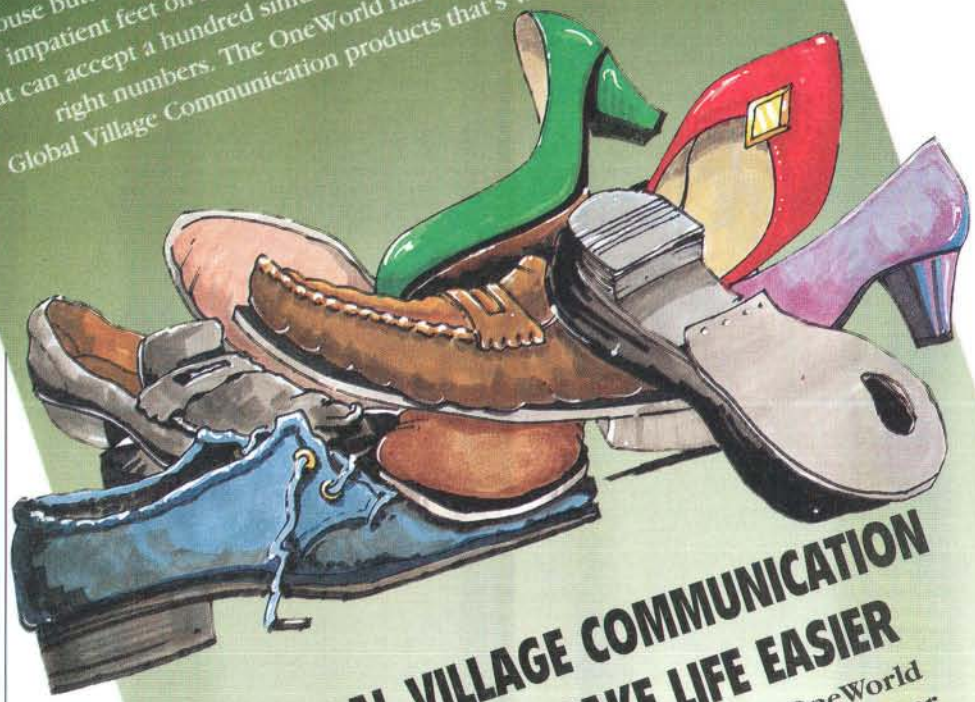

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Document imaging

MarcoPolo 3.0

Publisher: Mainstay
Distributor: CU, 081 200 8282
List price: £359
Pros: Searches on title, contents, keywords, and comments; built-in OCR; user-access control; can use predefined keywords; can save queries for rerunning.
Cons: Cannot create groups for access control.
Macworld rating: ✪✪✪✪

Like a fine wine, MarcoPolo keeps improving. Now shipping version 3.0, Mainstay has added OCR capabilities to its document-management program and offers a less expensive client version of MarcoPolo for users who don't need all the capabilities of the full-blown version.

MarcoPolo is organized around the concept of the document centre, which stores searchable images of documents either on your Mac (an individual document centre) or on a file server (a group document centre). Aside from the network connection, you use both individual and group document centres the same way.

Seeing and reading

The full-blown version of MarcoPolo includes administration options for document centres and an optical character recognition (OCR) capability. The client version is restricted to forming and running queries as well as saving or exporting the results of those queries.

The most significant new feature in MarcoPolo 3.0 is its OCR capability. Using OCR, you can now extract text from scanned documents and store the entire document (images as well as the associated text) for searching and retrieving.

MarcoPolo does a nice job of dealing with unrecognized words, one of the problems with most OCR programs.

When using OCR to process a document, MarcoPolo maintains the layout of the original document and inserts an image of each unrecognizable word into the OCR text. This way when you retrieve the document, you see the original layout and might be able to recognize the words that didn't make it through OCR.

In an effort to make OCR as simple and reliable as possible, MarcoPolo uses dictionary-based word recognition for the language of your choice, as well as letter-pair recognition, which you can customize (to help distinguish between 'th' and 'tn', for example). And since not all documents are the same quality, you can create and store scanning templates for different types of documents; these store scanner settings such as brightness and resolution.

In an effort to make archiving multiple documents easier while retaining the power of OCR, Mainstay lets you import TIFF files into MarcoPolo for automatic OCR scanning. If you don't want to use MarcoPolo's OCR interface, you can use an alternate scanning program to scan and store your pages as TIFF files.

You can then place the TIFF files in the drop folder associated with the MarcoPolo document centre and use MarcoPolo's OCR option to convert the files to text.

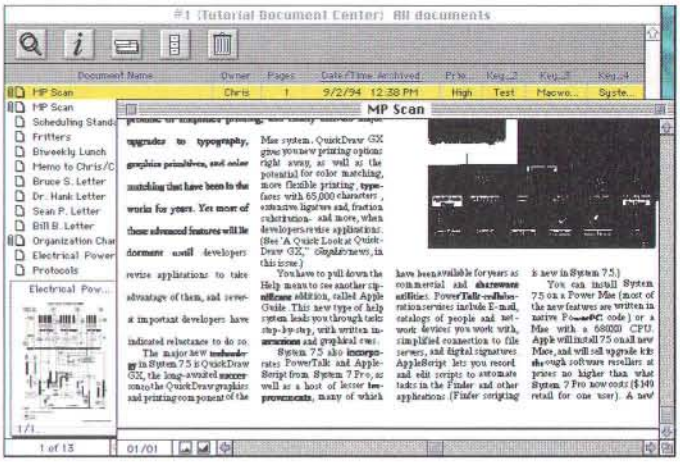
Users of the full-blown version of MarcoPolo can now add text notes to any page that's stored in a document centre. These notes can be placed anywhere on the page and are available whenever you access the document.

MarcoPolo's new archive-by-proxy feature lets the owner or originator of a document assign a proxy password to someone else to archive documents for the owner. Proxy passwords apply only to archiving documents and cannot be used to create or run queries.

Other significant new changes in MarcoPolo include support for more predefined keywords (up to 64 for each of the 7 keyword headings), auto-numbering of archived documents to preserve the archive sequence, and an option to change the archive date (to match the date of creation of a document rather than its archiving date, for example).

The Last Word

MarcoPolo is a significantly improved full-featured document-management system for Macs. The addition of OCR (both the handling of unrecognized words and the ability to batch-process TIFF files with OCR) makes MarcoPolo 3.0 a very usable system. – **Dave Kosiur**



Can you read it?
The frontmost window contains a page with OCR-recognized text, along with unrecognized words in boldface. (This document was scanned without any refining of the default scanning parameters.) The background window shows the results of a MarcoPolo query. In the lower-left corner is a thumbnail view of one of the documents found in this query.

REVIEWS

PowerBook utilities

Wiz Tools 1.2.2

Publisher: ASD Software
Distributor: Softline, 081 401 1234
List price: £69
Pros: Good connectivity and file-synchronization modules, including automation of Apple Remote Access.
Cons: Security module is not compatible with System 7.5; other modules add little beyond Apple's standard control panel.
Macworld rating: ✪✪✪

Wiz Tools from ASD Software is a mixed bag. This collection of PowerBook utilities has some modules that are so-so and some that are useful. Fortunately, you can activate the tools you want and leave the others off. Let's look at the good stuff first.

Synchro is a file-synchronization tool that lets you synchronize data between your PowerBook and your desktop Macintosh. Synchronization can be done manually, at shutdown (as long as both Macs are networked), or at preset times.

Your file-synchronization routine can include an entire disk volume or individual folders and files, and you can exclude individual items. Synchro has some useful safety features, too. For example, if two files have been modified at different times, Synchro asks you to decide what action to take – so you don't lose the wrong file.

The Connectivity module lets you automate Apple Remote Access connections. You create profiles, and Connectivity uses them to log on to different access sites. You can set up keyboard shortcuts to perform actions when you connect to remote sites, such as activating file synchronization.

Other options allow you to have AppleTalk automatically switched off if your computer starts up or wakes up without a network connection. If you restart or wake up after hooking

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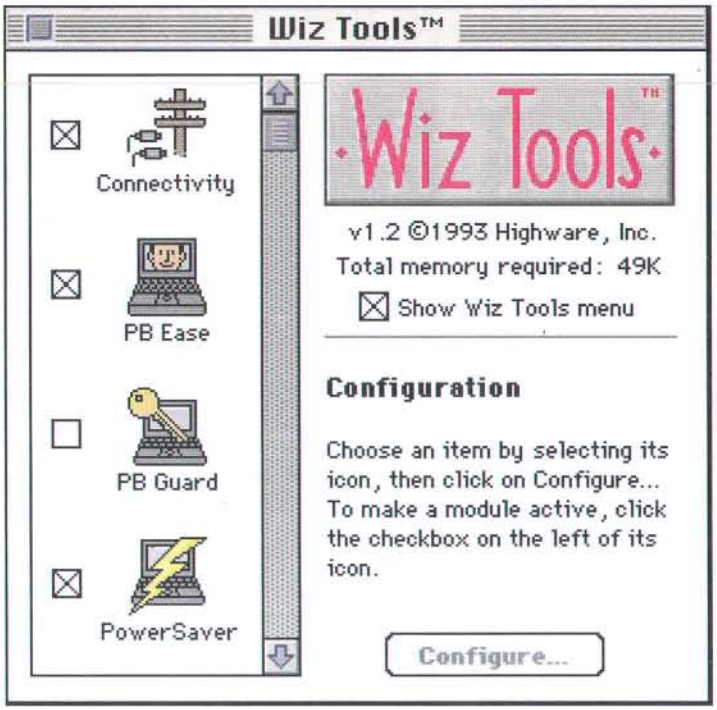


Have it your way
The Wiz Tools control panel lets you activate the individual modules and configure preferences.

up to a network, AppleTalk turns on automatically. You can also toggle AppleTalk on and off as needed.

The PB Guard module provides full security protection for your PowerBook, and unlike some of the other available products, it works on the driver level. You cannot get around password protection if you start with extensions off or with a floppy start-up disk.

The rest of Wiz Tools is rather undistinguished. The PowerSaver module lets you control the intervals for such functions as hard drive spin-down, processor rest, backlight dimming, and sleep.

It doesn't take you much further than the standard PowerBook control panel shipped with Apple's latest system software. WorldClock is a module that puts up a menu-bar clock and chimes on the hour. You can set aside separate clock-setting profiles for different time zones. System 7.5's Date & Time control panel has capabilities that add many of these functions to your Mac's system software.

PB Ease has possibilities, but just misses the mark. It lets you thicken and animate cursors for improved display on passive matrix PowerBook screens. You can establish drop menus and add keyboard shortcuts for dialogue boxes. But unlike, for example, Connectix's CPU, Wiz Tools doesn't offer Windows-like keyboard shortcuts for menu-bar commands.

You can also assign keyboard shortcuts to represent the page up, page down, home, end, and ten function keys. On Apple's newest PowerBooks, the 500 series, the function keys are part of the keyboard. Still, if you own an older PowerBook, this feature can be useful.

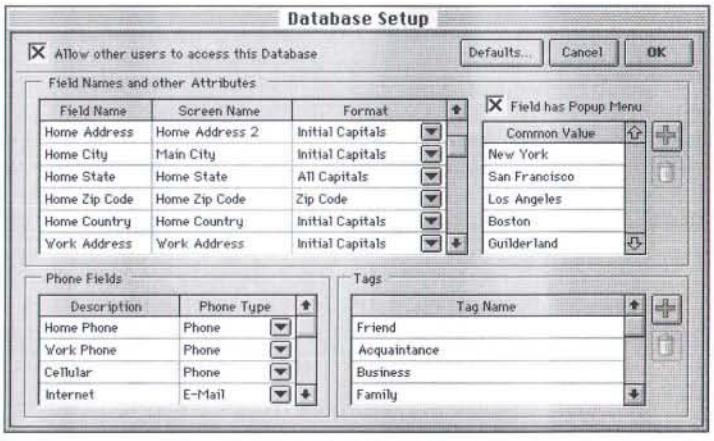
The Last Word

If the connectivity file-synchronizing and security features of Wiz Tools appeal to you, the package is worth considering. The rest of the modules are also-rans among PowerBook utility packages. – **Gene Steinberg**

Contact manager

FastPace Instant Contact 1.0

Publisher: Foresight Technology (0101 837 731 4444)
List price: $79.99
Pros: Fast; straightforward interface.
Cons: Application must be running to search database; no integrated scheduling program.
Macworld rating: ✪✪✪



Fields galore
FastPace's Database Setup window lets you enter a custom screen name for every field in your contact database.

If you need software to handle a growing roster of contacts, your choices range from simple address books like ComposeTel's Souvenir to general-purpose PIMs like Common Knowledge's Arrange.

FastPace Instant Contact program takes a middle-of-the road approach by providing comprehensive contact management but no scheduling functions.

FastPace is intuitive and easy to use without referring to the manual. (Just as well, since I found coverage skimpy in places. For instance, some field types aren't adequately explained, and the index is spotty.) A handy feature that displays prompts at the top of the screen when you point to a tool or object also helps new users come up to speed quickly.

FastPace has the features that you'd expect from a field-based contact manager, with 16 name and address fields (including separate fields for home and work addresses), 10 phone fields, 11 custom text fields, 2 number fields, and 3 date fields. A separate notes field holds up to 32K of text, and a check-box field lets you mark contacts for quick access. You can also define tags like "friend" or "business associate" to categorize contacts; oddly, the current release lets you repeatedly assign the same tag to a contact.

Several built-in shortcuts help cut down on keystrokes when you're adding new contacts. For example, you can define pop-up menus that contain commonly used entries like salutations or city names. (But FastPace lacks an autocompletion feature for filling in a field as soon as you've typed enough characters to match an item from a predefined list.)

continues page 57

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FastPace's look-up options range from simple scans based on a single field to complex multifield searches. (You can also look for contacts by tag, but not in the same operation as a field look-up.) Matching records appear in a separate list view that offers fewer functions than some other programs.

No control

For example, you can specify the name and order of fields in the display, but you can't change the font or colour, and you can't edit contact data directly within the list view. FastPace also lacks a control panel that would let you look for contacts without launching FastPace, a feature found in competing programs like Portfolio Software's Dynodex.

You can print contact information in a variety of formats, including address books, fax cover sheets, envelopes, and labels. An integrated word processor lets you create custom documents that contain embedded contact information. Although billed as full-featured, the word processor lacks some basic functions, such as find and change. Also, there is no way to import files created with other word processing programs, and you can't save documents for use elsewhere.

FastPace handled my test database of 8,000 contacts without a hitch, even on my aging Mac IIfx. FastPace lets you open several contact files at once, and you can drag contacts from one database's list view to another if you install FastPace's Drag-&-Drop extension.

Sharing contact files on a network is simple and doesn't require a dedicated server. FastPace uses a record-locking scheme that prevents two users from modifying a contact record at the same time. If you keep copies of your contact database on a PowerBook and a desktop Macintosh, FastPace's merge function can reconcile differences between the two versions.

The Last Word

While FastPace could use a few additional features (especially a menu-bar search function) it does a capable job of contact management. FastPace does not offer two-way sharing of contact and scheduling information the way Now Contact and Now Up-to-Date or Aldus Consumer Division's TouchBase & DateBook Pro do. (An update that allows FastPace to send contact data to Attain's In Control may be shipping by the time you read this.) If your needs are primarily confined to contact management, FastPace Instant Contact is worth a look. – **Franklin Tessler**

Utilities collection

Now Utilities

Publisher: Now Software
Distributor: Ingram, 0908 260160
List price: £69
Pros: Comprehensive, well-integrated collection of system utilities; excellent value.
Cons: Inconsistent use of System 7.5's new features.
Macworld rating: ★★★★

Many consider Now Utilities version 4.0 the best Mac system utility collection around, and version 5.0 proves that Now Software has not been resting on its laurels.

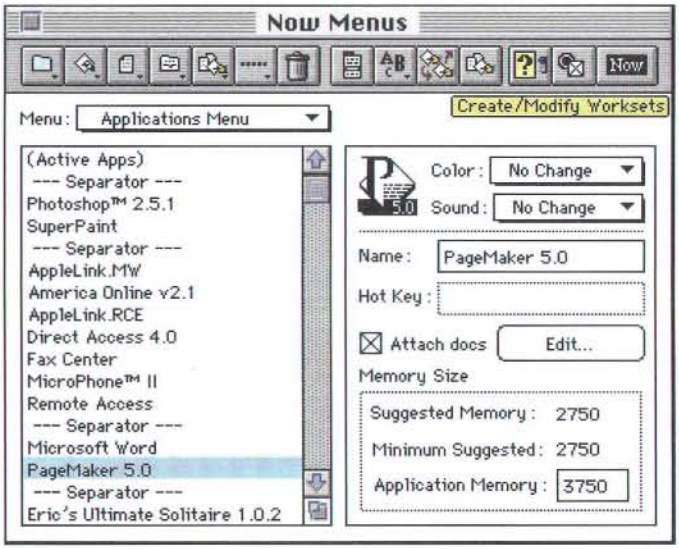
The most noticeable improvement to this version is the addition of two modules, Now FolderMenus and Now QuickFiler. Now FolderMenus adds a pop-up menu of a folder's contents to every folder in the Finder. Apparently inspired by Inline Software's PopupFolder, Now FolderMenus is equally handy, seems faster, and has a few additional and helpful options that PopupFolder lacks.

Now QuickFiler provides an alternate view of your disks, folders, and files in which you can perform all standard file-management functions. It also has a sophisticated Find command and can compress files on demand or in the background. Although Now QuickFiler performs these tasks adequately, anyone looking specifically for file management will probably find DiskTop (Prairie-Soft) easier to use, and if you're serious about file compression, you would do better with StuffIt Deluxe (Aladdin Systems) or DiskDoubler Pro (Symantec).

All of version 4's seven modules have been updated for version 5. Two modules (Now Menus and Now Startup Manager) have been improved significantly. In Now Menus, you can now create any number of menu-bar menus (in addition to unlimited pop-up menus) and give each one a unique and colourful menu icon.

The smart menu items (recent folders, recent files, and the like) are also smarter, and you can rename the items in a Now menu for easier identification. Now Startup Manager has added start-up–document conflict resolution and control over more types of start-up documents, to the point where it is a viable alternative to Conflict Catcher II (Casady & Greene), the best extensions manager around.

The other modules from version 4 all have a new look and a better design and are, on the whole, easier to use. Now Profile has been updated to recognize Power Mac and System 7.5 features and can e-mail its system description using PowerTalk. Now Scrapbook supports GIF and JPEG graphic formats. Now SuperBoomerang, Now WYSIWYG Menus, and Now Save display only minor changes aside from the new design.



Making a menu
In the Now Menus Menu Editor, yellow pop-up-button legends explain the function of each button in the button bar. The button under the pointer here, for example, allows you to create work sets containing related applications and documents.

All Now Utilities modules run in native mode on a Power Mac, but only some of them take advantage of System 7.5's new features; you cannot add items to Now Scrapbook by means of drag & drop, for example, although you can, oddly enough, in NowMenus' edit window (and in Apple's Scrapbook).

The Last Word

Over the course of five software generations, Now Utilities has evolved into a fine-tuned, interlocking set of Finder enhancements. Three of its modules (Now FolderMenus, Now Menus, and Now SuperBoomerang) are almost indispensable, and while the other six may not be tops in their category, they are well worth considering. As a collection, Now Utilities 5.0 remains the best in the business and is an excellent investment for almost any Macintosh owner. – **Robert Eckhardt**

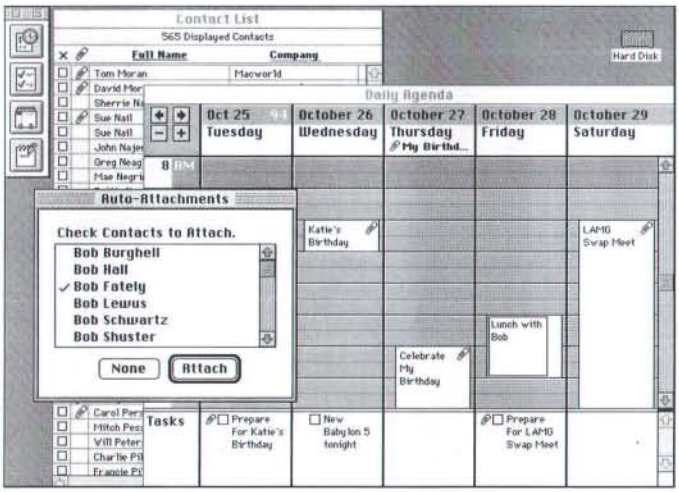
Personal info manager

Claris Organizer

Publisher: Claris Corporation
081 756 0101
List price: £49
Pros: Excellent integration; good intelligent assistance.
Cons: Some printing problems; no menu-bar access.
Macworld rating: ✪✪✪

Entering a field as crowded as the personal information manager (PIM) market requires a great deal of confidence on Claris's part. On the one hand, there are already many competitors, some long established, such as Adobe's TouchBase Pro and DateBook Pro, Now Software's Now Up-to-Date and Now Contact, and Portfolio Software's Day-to-Day package (formerly Dynodex).

On the other hand, Claris has had the opportunity to build on those features; Claris Organizer is a remarkably polished first release.



Getting attached
Organizer's Auto-Attachments feature is connecting one of the Bobs in the list to the "Lunch with Bob" appointment.

Organizer is an all-in-one PIM that includes modules for Calendar, Contacts, Tasks, and Notes. The program has a floating button palette that lets you access each module's window.

Organizer is a single-user product; it can't be opened and shared by multiple simultaneous users, as can Now Up-to-Date and TouchBase Pro. Claris Organizer gets by with only 1.2MB of RAM, despite being a memory-based program. Because the data is in RAM, performance is good. Sorts and searches occur almost immediately.

Organizer's Calendar module provides separate Weekly, Monthly, and Daily Agenda views, as well as a Navigator window that enables you to quickly jump to any past or future date. Each view has arrow buttons that let you move forward or backward in time; in addition, the Daily and Weekly views have plus and minus buttons that control how many days or weeks you can view at one time.

The Daily view window is split horizontally into two panes. The top pane shows your appointments, and the bottom pane displays the day's tasks. The Monthly view, unfortunately, doesn't let you create banners that span several days, for denoting business trips or other longer events. You can drag events to move them between days, but you can't option-drag events to copy them from one day to another.

Task levels

The other three modules (Contacts, Tasks, and Notes) can each display a list view and an individual detail window. Each contact record can handle two sets of addresses, four telephone numbers, and four customizable fields. Tasks (what some programs call to-dos) have five priority levels and, like appointments, can be one-time or recurring. You can also set alarms for tasks or appointments.

The feature that sets Claris Organizer apart from most other personal information managers is its intelligent assistance. Like some programs, Organizer has several data entry aids for entering contacts. The program has pop-up menus with common entries for most fields, such as Title, State, and phone labels. It also automatically completes a field based on the first few keystrokes.

Claris Organizer has the ability to attach any item to any other item. It's easy to attach a contact to an event, or a note to a contact. Items with attachments have a small paperclip icon next to them. Clicking on the paper clip displays a pop-up menu with a list of the attachments.

Of the several ways to attach items, the best is drag & drop. It's simple to associate co-workers with a meeting: just drag the co-workers' names from the contact list onto the appointment in your calendar. Once you attach people to an event, it's a snap to contact any of them. You can also drag items to any of the module buttons in the palette.

These items are intelligently named, so that, for example, if you drag an appointment called "Breakfast Meeting" onto the Note button in the palette, you get a new attached Note named "Note regarding Breakfast Meeting." If you drag Bob's name from the contact list onto the Task button, you create a "Call Bob" task.

Claris Organizer's assistance really shines with its Auto-Attachments feature. If you enter "Dinner with Bob," the program attaches Bob to the appointment. If your contact list has more than one person named Bob, Organizer pops up a list of all the Bobs, and you choose which one to attach.

Viewing and sorting information in Claris Organizer is adequate but could be improved. You can easily select a list of contacts within a particular category, but there's no simple way to select all contacts except that category, or to select and mark contacts in one step. You can sort on only two fields at a time and only in ascending order.

Claris Organizer lacks a feature found in most of its more recent rivals: an extension that allows quick menu-bar access to Organizer from within all other programs. Now Contact's QuickContact pioneered this idea, and it was followed by the Adobe and Portfolio products. Such easy, universal access to your contacts and calendar is becoming an expected standard for PIMs, and I hope that Claris Organizer will add this feature in the next revision.

The Organizer manual, which consists mainly of a tutorial, is surprisingly skimpy and even lacks an index. The online help included with the program is considerably more detailed and useful.

Claris Organizer does a good job of printing lists or the detail information from all modules, and it can print envelopes, fax cover sheets, and labels. The program comes with several Avery-label templates and lets you specify a start location when printing labels, so that you can reuse partially used label sheets. Contacts and calendars can be printed (double-sided, if desired) in several day-planner formats, but some are less useful than others.

The compact day-planner size (4.25 by 6.75 inches, used by Filofax, Day Runner, and others) prints poorly; the printed address-book and calendar pages are a bit too big and print two across a sheet of letter-size paper. Other programs size their pages correctly and fit three compact day-planner pages on each 8.5-by-11-inch sheet.

Stay together

With the excellent integration of the four modules and the program's intelligent assistance, Claris Organizer is a worthy competitor in the PIM

continues page 61

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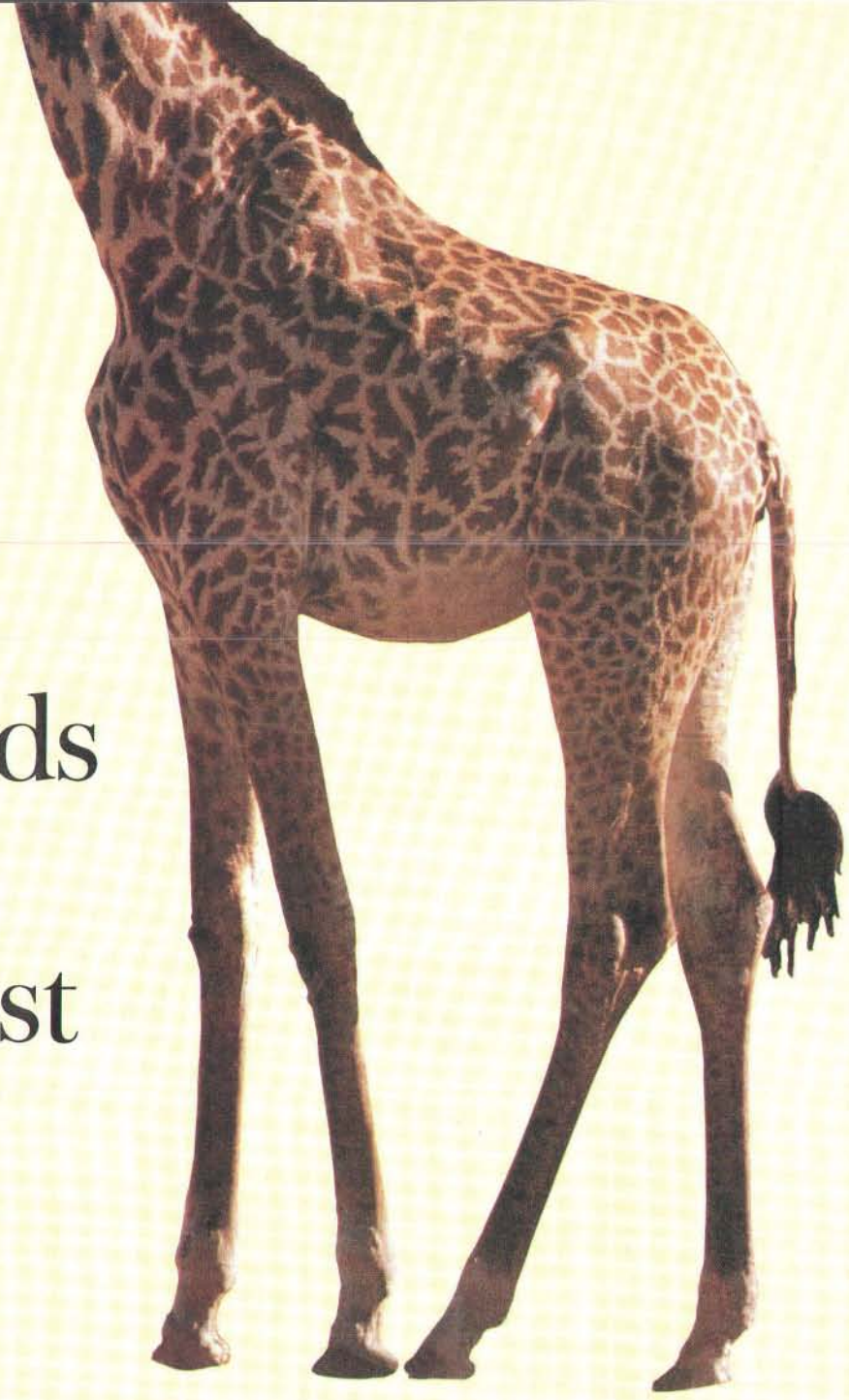

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market. In its first release, it lacks some features that other products boast, but none of these are egregious omissions.

In its present version, Organizer won't tempt most longtime PIM users to switch.

But new PIM users, lured by the low price, good performance, and ease of use, will probably find that Organizer meets their requirements. With such a strong foundation, Claris Organizer just needs to grow up a bit in the next version to become a major player. **– Tom Negrino**

Internet books/software

The Internet Companion

Publisher: The Voyager Company
Distributor: Kimtec (0202 888873)
List price: £TBA
Pros: Fun tidbits.
Cons: Software hard to use; book outdated.
Macworld rating: ✪✪

Internet Explorer Kit and Internet Starter Kit

Publisher: Hayden Books
Distributor: IBD (0442 881900)
List price: £27.50
Pros: Well-written books and useful software.
Cons: None
Macworld rating: ✪✪✪✪

Internet Membership Kit

Publisher: Ventana Media (0101 919 942 0220)
List price: $69.95
Pros: Easy to set up; nice Internet-access offer.
Cons: One included book, The Mac Internet Tour Guide, is not that useful.
Macworld rating: ✪✪✪✪

It's the hot, overhyped topic of 1994: the Internet. Members of online services are able to explore some Internet functions, but how do you really get on the Internet? These three book-&-software combinations aim to help users navigate the infobahn.

The Internet Companion

Voyager's package contains *The Internet Companion*, a HyperCard-based book written by Tracy LaQuey (Addison-Wesley, 1992). LaQuey's book is well written but offers much less information than do the others reviewed here. It lacks the long lists of FTP sites and newsgroups that other Internet references contain, and its information isn't completely current. For example, a search on the word 'Mosaic' yielded nothing.

This electronic book is surprisingly easy to browse; you can search the text and earmark references. But The Internet Companion suffers from the drawbacks of all electronic books: you need a power source, and you can't use a highlighter pen. Also, you can print only one computer screen of text on an 8½-by-11-inch sheet of paper, leaving half the page blank.

The Voyager package comes with MacIntercomm Lite, telecommunications software from New World Computing). You use the book stack's Connect button to launch the telecom software and connect to CERFnet's Internet centre, where you can find Internet addresses as well as search Gopher and WAIS, and Telnet. (For $49.95 you can upgrade to the full version of MacIntercomm, which gives you scripting and more transfer protocols.)

While *The Internet Companion* provides Internet access, you really get just a terminal-emulation screen; you can't use any of the graphical Internet clients (like TurboGopher or Fetch) that come with other packages. Plus you're subjected to the on-screen garbage that's typical of Unix, as well as the hard-to-decipher buttons for controlling access.

Internet Explorer Kit and Internet Starter Kit

Internet Explorer Kit (Hayden Books, 1994) is a companion book to Adam Engst's *Internet Starter Kit for Macintosh* (Hayden Books, 1993). The Explorer Kit package contains exactly the same software as Ventana's Internet Membership Kit does.

Starter Kit is one of the best introductions to the Internet I've seen for Macintosh users. It clearly explains basic terms and contains excellent resources for newsgroups, file-transfer servers, and mailing lists, all categorized by topic.

Explorer Kit tells you where to go once you're on the Internet. The book demonstrates ways to use the Internet and contains lots of quotes from online conversations.

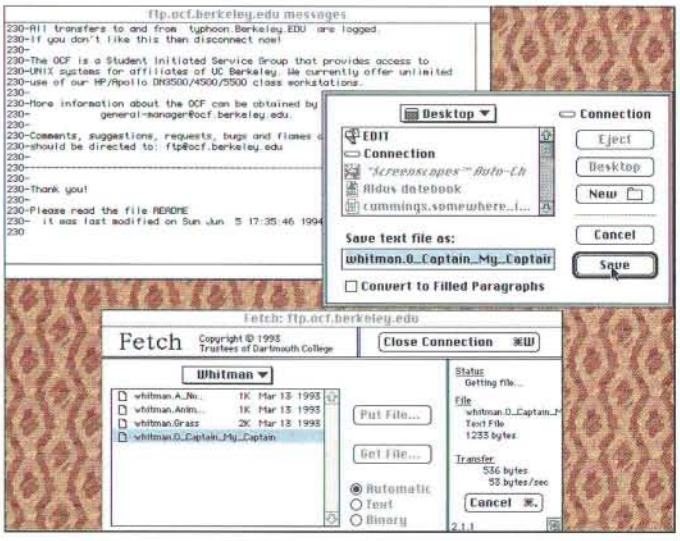
Starter Kit comes with MacTCP, InterSLIP, Eudora, Fetch, TurboGopher, and StuffIt Expander. These pieces of software are the greatest hits of Internet shareware; with just these six, you can connect to your account, send mail, retrieve files, and decompress those files.

(For more about navigating the Internet and using Mosaic, see "Taming the Internet," in *Macworld*, December 1994.)

Explorer Kit includes several lesser-known Internet tools, along with the University of Minnesota's elegant and popular gopher client TurboGopher.

Peter Lewis's Anarchie (pronounced anarchy) helps users browse and retrieve files from Archie servers, which provide lists of which files are available on which FTP servers. Finger, also written by Lewis, lets you find information about people online.

Voyager's Gopher
With Internet Companion's access offer, you can retrieve files by using telecommunications software.



Fetching poetry
With the Hayden and Ventana packages, you can view FTP sites as disks and save files to your hard drive.

MacWAIS is a client that lets you search Wide Area Information Servers. MacWeather tells you the temperature in major cities around the world.

The software is easy to use, with familiar Macintosh commands and file names, and in most cases, simple dialogue boxes. Once you get the hang of using these products, accessing the Internet is almost easy.

continues page 62

If you decide to buy one of these sets, choose *Starter Kit* unless you're an experienced Nethead. With *Starter Kit's* included software, you can find the software that comes with *Explorer Kit* out on the Net. Note that the package does not cover the shareware fees of the included software; so be a good citizen and pay the fees ($25 for the Starter Kit's shareware and an additional $65 for all the *Explorer Kit's* shareware).

Internet Membership Kit

Internet Membership Kit by Ventana Media contains two books – Michael Fraase's *The Mac Internet Tour Guide* (Ventana Press, 1993) and Harley Hahn and Rick Stout's *The Internet Yellow Pages* (Osborne/McGraw-Hill, 1994) – as well as Michael Fraase's booklet *A Brief Guide to Mosaic*, and all the software included with Adam Engst's *Internet Starter Kit*. Fraase's Internet book isn't nearly as helpful, well written, or organized as Engst's. *Yellow Pages*, on the other hand, is clearly organized, useful, and funny; the only thing missing is a pad of Post-it notes to help you mark your favourite Internet sites.

Both the Voyager and Ventana products offer free access to CERFnet for a limited time, but the Ventana product gives more online time.

The best part of the Ventana product is its inclusion of preconfigured software. SLIP novices usually have to configure their own TCP software, which can be confusing even for experienced computer users. Ventana's combination lets you skip the exciting task of entering arcane information about your domain name server and IP address, making connection to the Internet a whole lot easier.

The Last Word

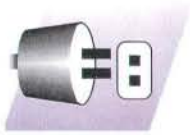
Virtually all the software included in these packages is readily available from user groups, online services, and the Internet, so these packages' true value is their convenience. And surprisingly, none of them come with Mosaic, though you can get it online fairly easily, by anonymous FTP from ftp.ncsa.uiuc.edu (141.142.20.50) as NCSA Mosaic-Mac.10.sit.hqx. in the directory /Mac/Mosaic.

If you don't need an Internet access offer, Hayden's *Starter Kit* is an excellent resource. If you do need access, I recommend the Ventana kit. I recommend the Voyager package only if you want an electronic book or text-based Internet access.

Of course, once you're on the Internet, you'll find that the other million people who just discovered its utility are clogging popular servers and causing general gridlock. Be aware that while you're using a friendly Macintosh, it's talking to a grouchy Unix box.

Getting on the Internet is not going to be as easy or intuitive as you'd like. – **Joanna Pearlstein**

Network accelerator



RunShare

Publisher: Runway
Distributor: Simms Int. (081 870 4020)
List price: from £299
Pros: Transparent operation; accelerates both LAN and WAN file transfers.
Cons: Significant acceleration in only certain file-copying situations; poor performance on sub-Quadra Macs; 800K memory overhead; intrusive copy protection.
Macworld rating: ✪✪✪

Network users are a fickle lot. Where once we marvelled over effortless network file-sharing on the Macintosh, now we grumble over slow performance. RunShare is a System extension that aims to pump up file-transfer speeds across both local and wide-area networks. And it does, but not equally well for all networks.

The product package includes two floppy disks – one original and one back-up – with an installer that copies the RunShare control panel to the System Folder. A concise but complete manual guides you through the simple installation process and explains the straightforward operation, which boils down to turning RunShare on or off.

When turned on, RunShare automatically accelerates Finder copies between any two RunShare-active Macs. In the process, your System memory requirements jump by about 800K.

The amount of acceleration varies depending on the direction of the copy operation. Test showed very little improvement in speeds when copying files from a remote machine onto a local Mac, while copying files in the other direction showed at least double the throughput. Publisher Run says this is normal.

Processor power and network speeds also affect the amount of speed-up.

While there was almost no improvement on 68030-based Macs over LocalTalk, there was a three-fold improvement on 68040s over EtherTalk. And RunShare accelerates only the copying of data – you'll see far greater improvements copying text and graphic files, while application programs, which consist almost entirely of resource code, show little or no improvement.

Finally, you'll get little improvement when copying large numbers of small files, but dramatic increases when copying single large files.

You buy a RunShare license for every user who needs the acceleration. A low-end version of the product, for LocalTalk networks only, comes in a six-user package. The high-end, all-network version, which supports EtherTalk, TokenTalk and FDDI, comes in 2-, 5- and 25-user packages.

Each package contains only the two disks – you manually install the software on each machine and RunShare keeps count of the the times the program has been installed. If you later want to move RunShare from one machine to another, you must first run the installer's de-install mode on the first Mac.

The Last Word

RunShare's high overhead and minimal speed improvement on low-end Macs makes it impractical for many smaller networks. And RunShare's copy protection is guaranteed to drive network administrators up the wall; a run-time serial number check would be just as effective and much less intrusive.

Still, with performance gains of up to two or three times on large file transfers between fast Macs, RunShare could be a winner for desktop publishers who frequently spend hours copying big scanned graphics across networks. – **Mel Beckman**

HOW FAST IS RUNSHARE?

Times in seconds.

	With RunShare	Without
Copy ten 1.8MB files	147	144
Copy ten 6.4MB files	484	506
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The files were copied from a Centris 650 to another Centris 650 over EtherTalk.

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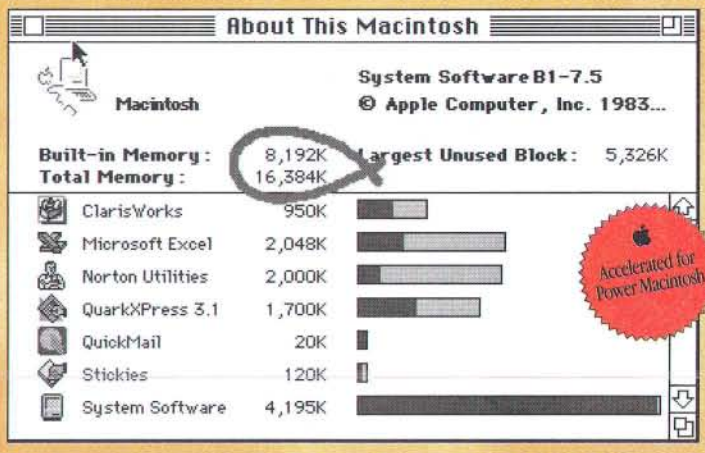

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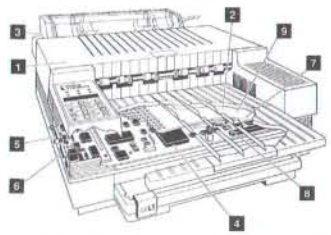

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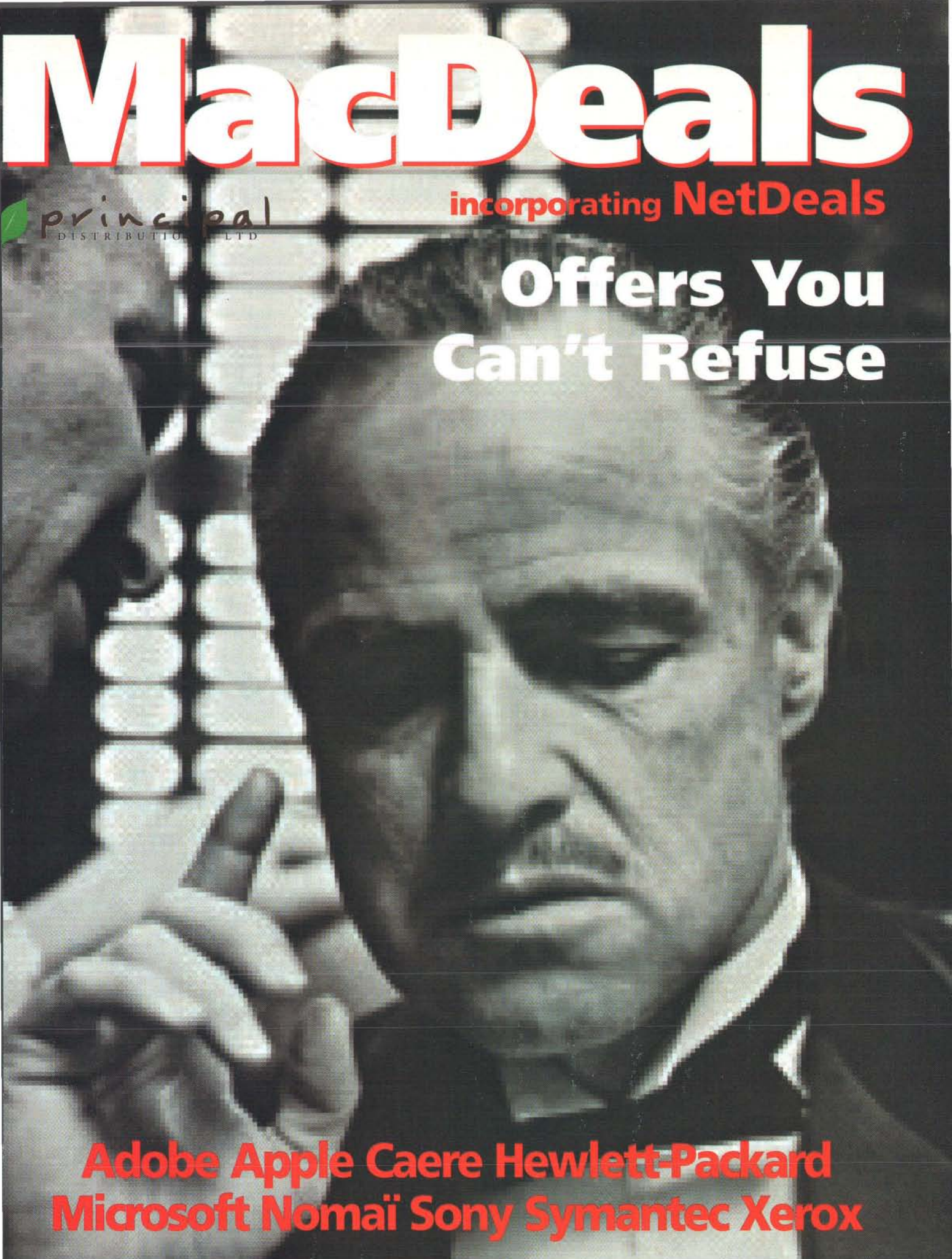

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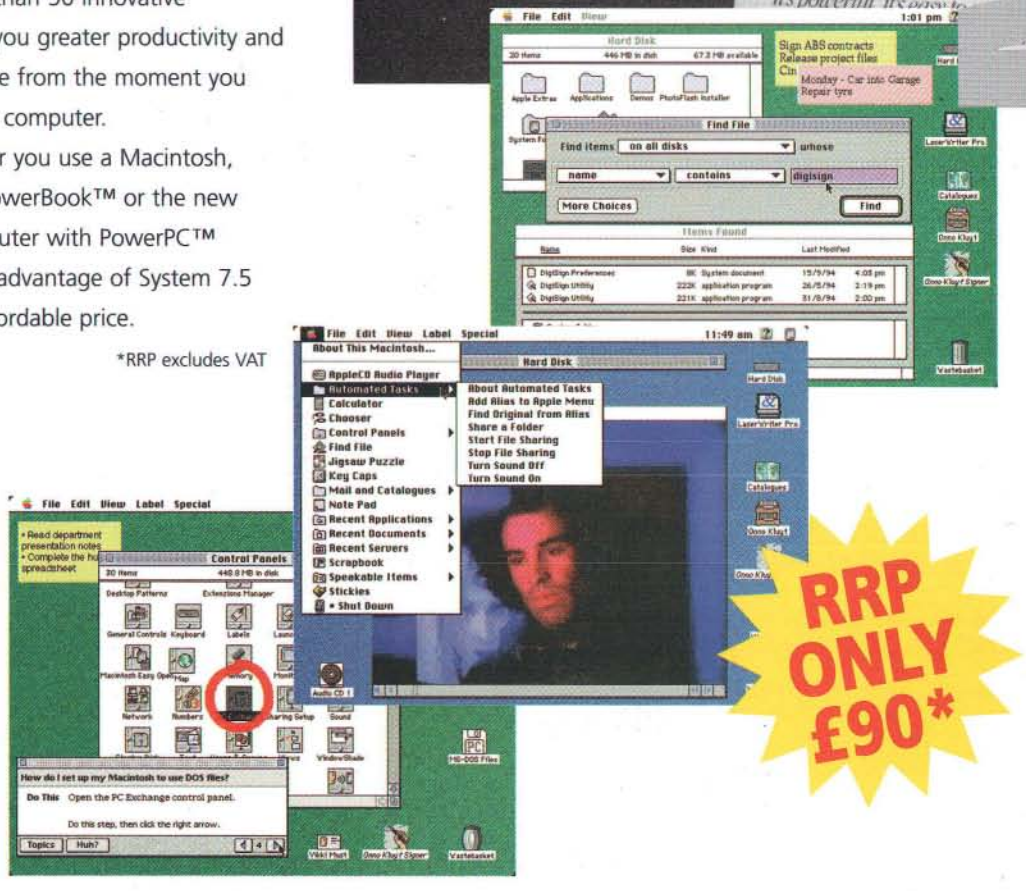

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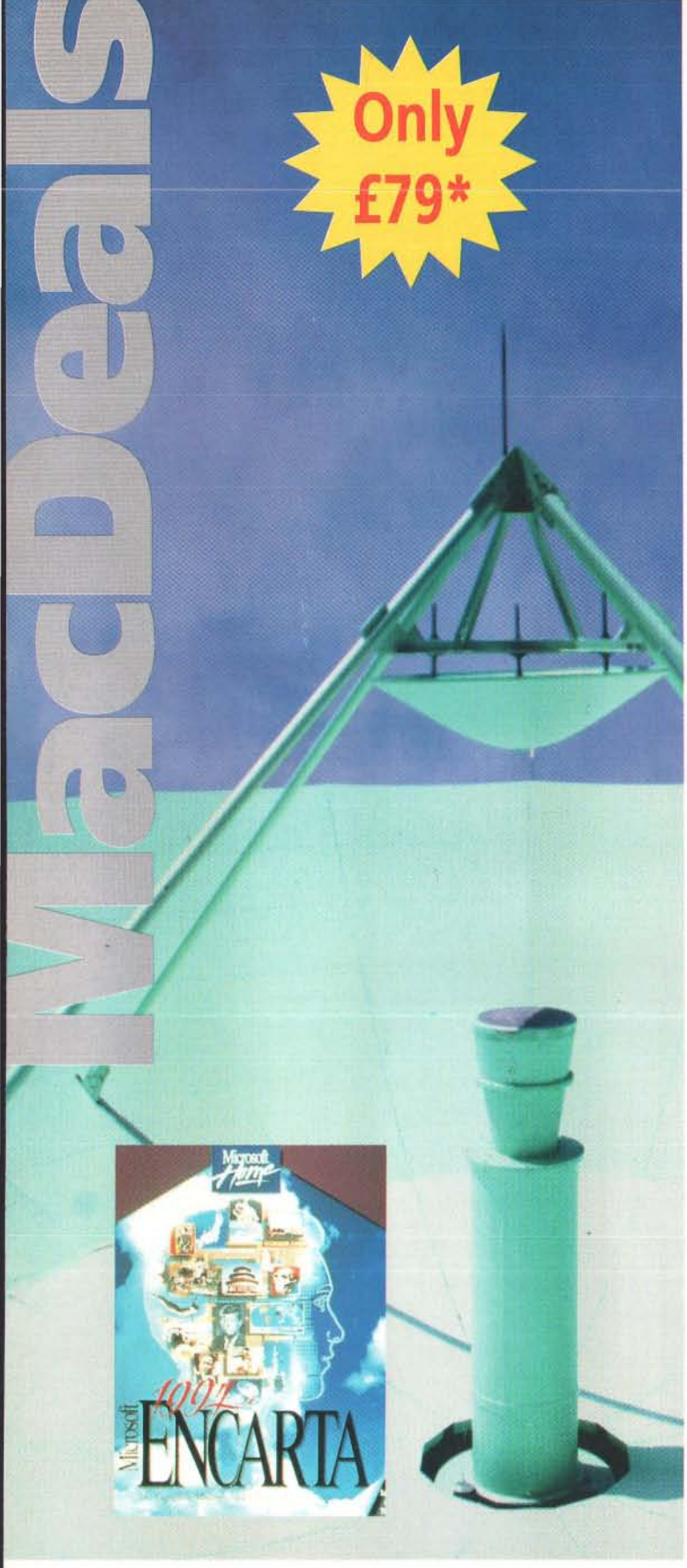

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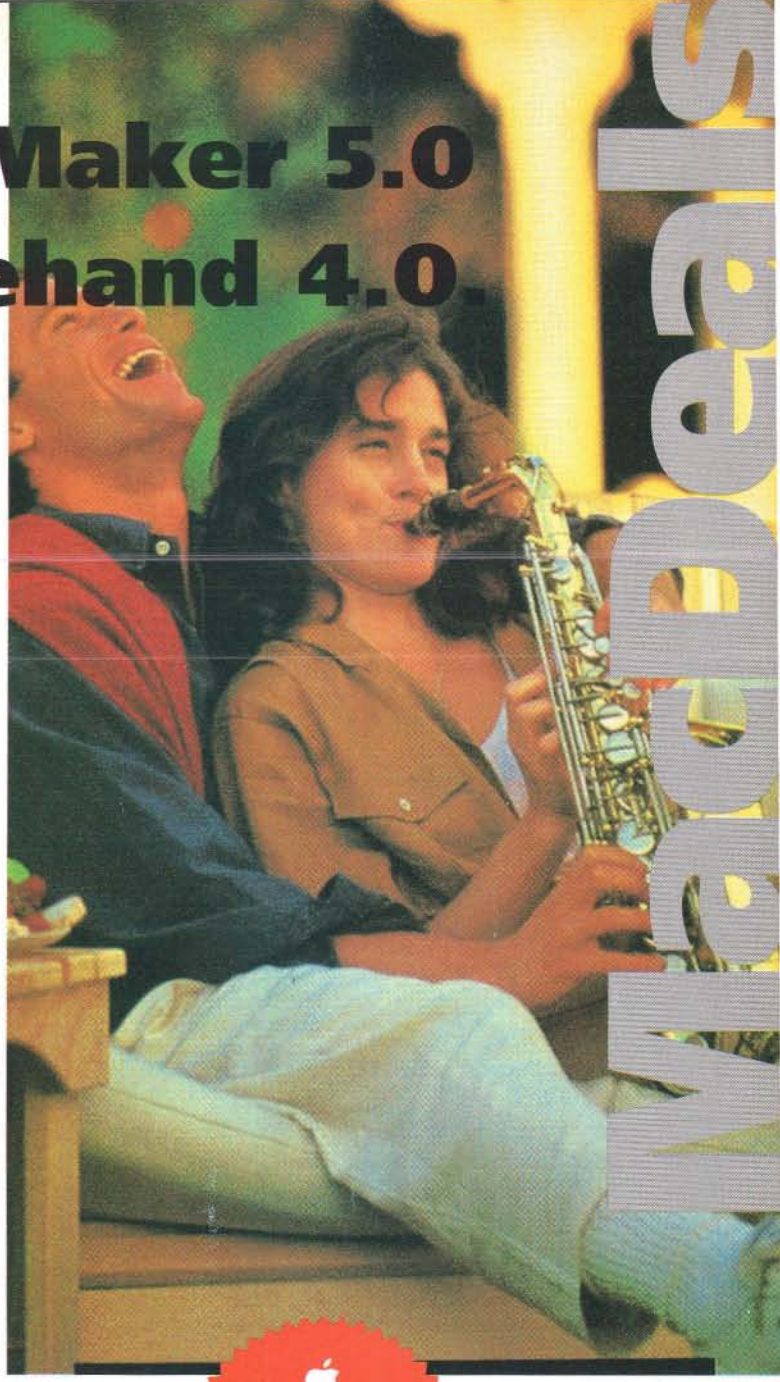
Adobe PageMaker 5.0 & Aldus Freehand 4.0. Music to Your Ears.



The world's best-selling professional publishing software and the leading design and illustration package are now available as accelerated software for the Power Macintosh

This means that for the first time you'll be able to take full advantage of RISC architecture. In short, you'll be able to spend more time creating. And less time waiting.

Adobe PageMaker 5.0 accelerated for the Power Macintosh is two to four times faster than versions running on other Macintoshes, including high-end Quadras. So you'll get more productivity in all aspects of your work.

You'll also virtually eliminate waiting time for repetitive actions, like opening files, manipulating graphics, displaying pages or reflowing text.

Aldus Freehand 4.0 provides acceleration and plenty of useful few features.

They include a pressure-sensitive tool for calligraphic pen effects and a polygon tool.

The new colour mixer allows you to mix, define and name colours quickly and simply by dragging and dropping them between different design elements and palettes.

A total of 11 floating pull-down palletes give you ready access to handy tools and functions.

Meanwhile, the Inspector palette gives you a central access point that allows you to manage nearly everything.

Freehand 4.0 has an RRP of £450*. And PageMaker 5.0 costs just £695*. So get busy and call your local dealer now.

*RRP excludes VAT

Accelerated for Power Macintosh

Adobe™

PAGEMAKER 5.0
RRP £695*
FREEHAND 4.0
RRP £450*

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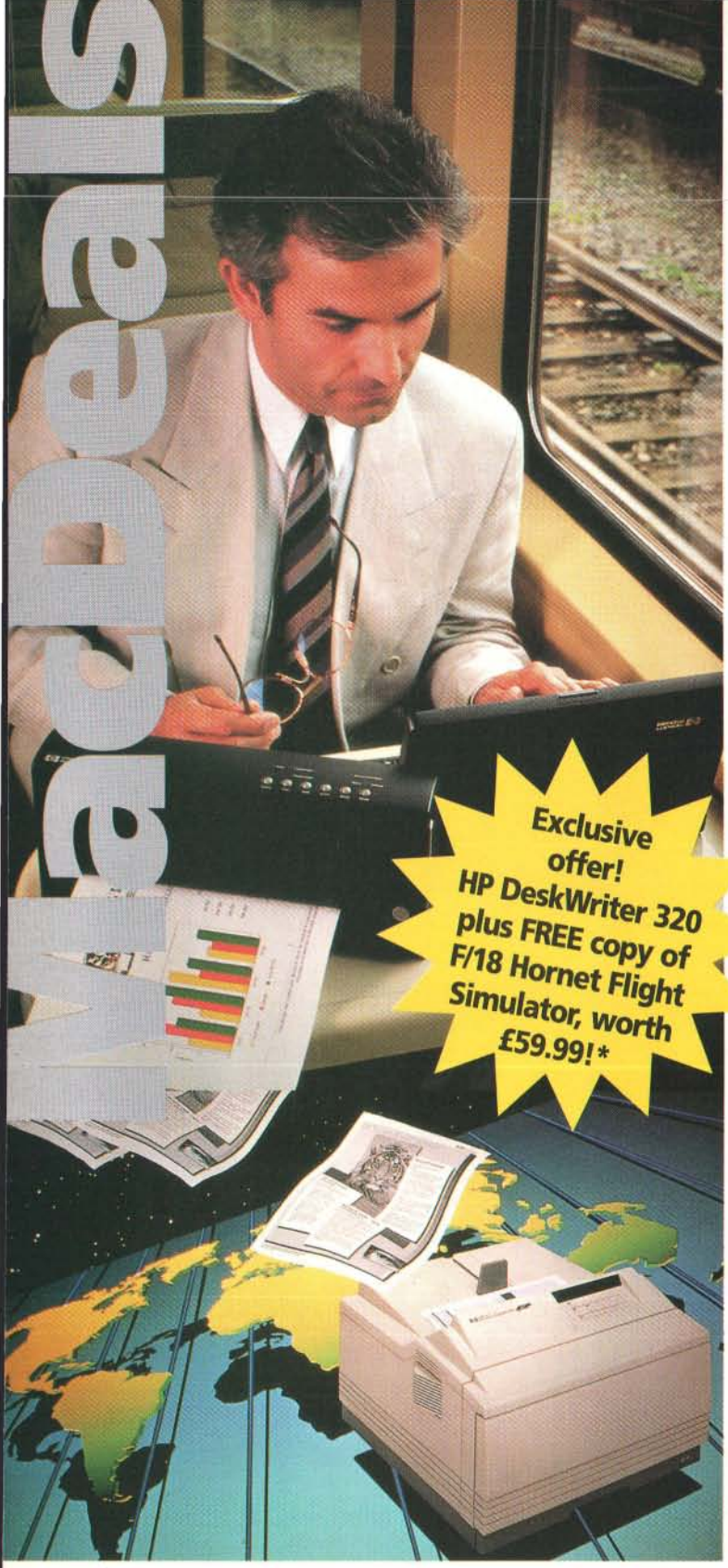

Hewlett-Packard's new two.

Hewlett-Packard announce two new printers, the HP DeskWriter 320 and the HP LaserJet 4MV.

HP DeskWriter 320.

Whether you need to print on the move or on a network, the world's leading manufacturer of laser printers has a great new printer for you.

The HP DeskWriter 320 is a tiny printer that easily fits into a briefcase and includes a rechargeable battery for true portability. In fact, it prints 100 monochrome pages on just one charge.

The HP DeskWriter 320 also gives you the option of full colour printing.

A true 600 x 300 dpi resolution plus 84 typeface size and style combinations ensure that whatever you print looks professional and eye-catching. 14 TrueType scalable fonts are also included.

The HP DeskWriter 320 is faster than you'd expect from such a light-weight. It whizzes along at 3 pages per minute in draft mode, 2 pages per minute in standard monochrome mode.

HPLaserJet 4MV.

Hewlett-Packard also have a fast new mover for the office. It's an A3 printer that gives you speed, high resolution and networking capability.

The HP LaserJet 4MV is one of the fastest office printers around. Its blistering 16 pages per minute speed and 250 sheet input and output capacity, make it ideal for workgroups.

Quality isn't sacrificed to quantity, either. The HP LaserJet 4MV delivers a pin-sharp resolution of 600 dpi.

To fully support a multi-user environment, networking with the 4MV is made simple with the fully inclusive, plug-in-and-play EtherNet/LocalTalk interface.

Whether you need a heavy duty printer for the office, or a light-weight portable for the road, Hewlett-Packard has the answer. For more details, call one of the dealers listed below.

* Limited offer while stocks last

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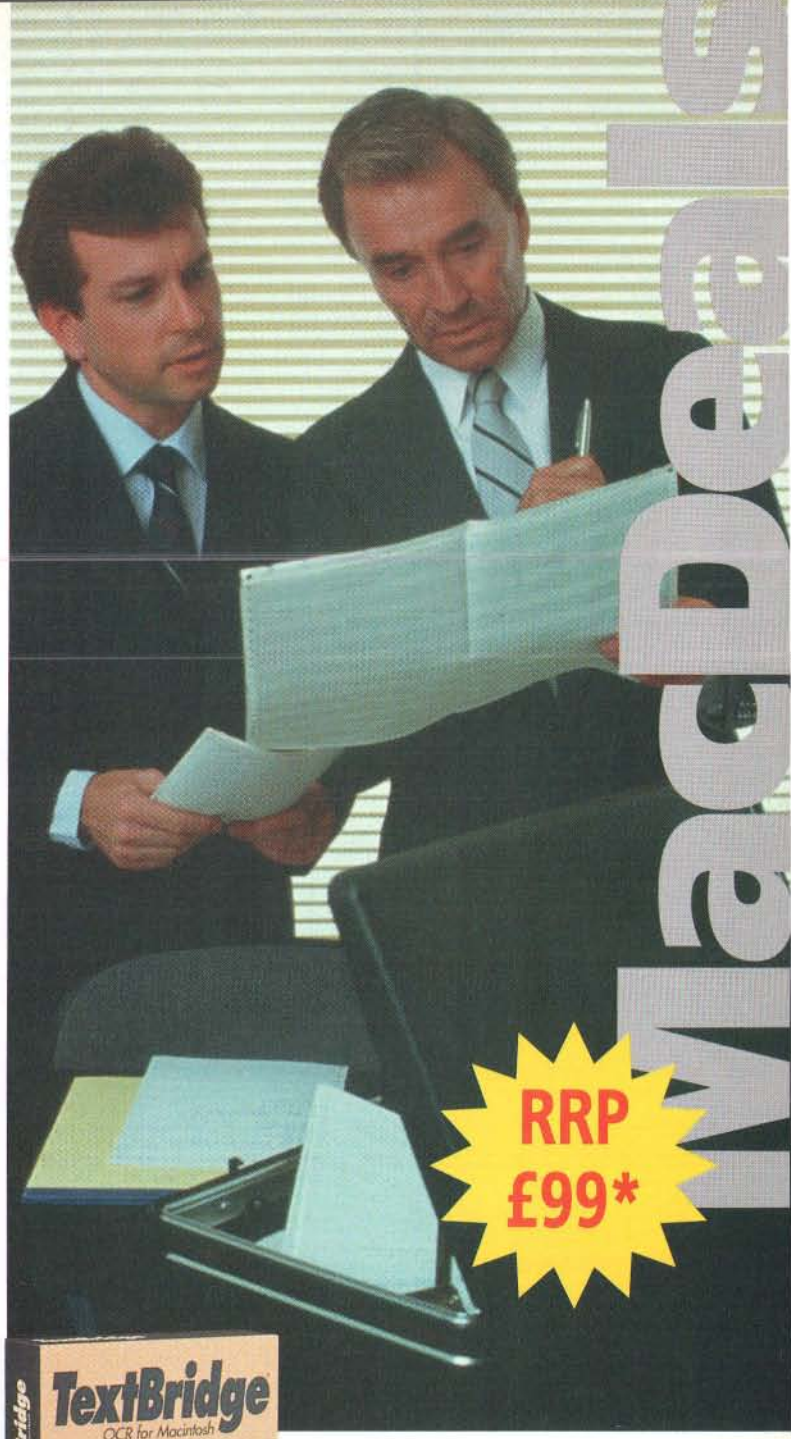
TextBridge Reads All Your Dirty Letters.



Filthy faxes? Dirty documents? Corrupt correspondence?

TextBridge OCR software will read them without flinching. That's why it's rated as the most accurate OCR package across the widest range of documents.

Developed at Xerox's Palo Alto Research Centre, TextBridge will scan all your documents. All you have to do is hit the 'GO' button.

And because it's accelerated for the PowerMac, you can achieve very fast operation, even with the poorest quality document.

Once it's scanned, the document is yours to manipulate. You can publish, process and store it just as if you'd re-typed it yourself. And Apple Script support allows you to program complex operations to take place automatically.

TextBridge also supports word processing, publishing, spreadsheet and database packages, giving unparalleled format integrity.

Columns and other document complexities are also handled automatically by TextBridge.

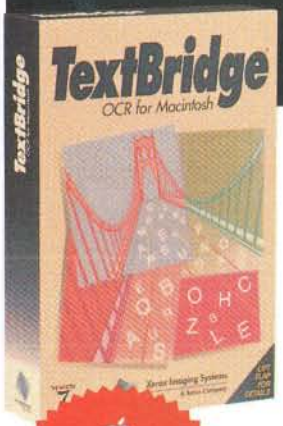
And, in addition to English documents, TextBridge enables you to scan most European languages, including French, Italian and German. TextBridge will also recognise all your characters.

Once you've scanned in your document, the Lexifier™ improves recognition further by differentiating between O's and zeros, to help ensure accuracy.

When text quality is really poor, TextBridge's Verification function allows you to teach the software distorted character shapes, thus reducing editing time.

At £99*, TextBridge is a quarter of the price of other OCR packages. Call your local dealer now for further details.

*RRP xcludes VAT



Accelerated for Power Macintosh

Xerox Imaging Systems
A Xerox Company

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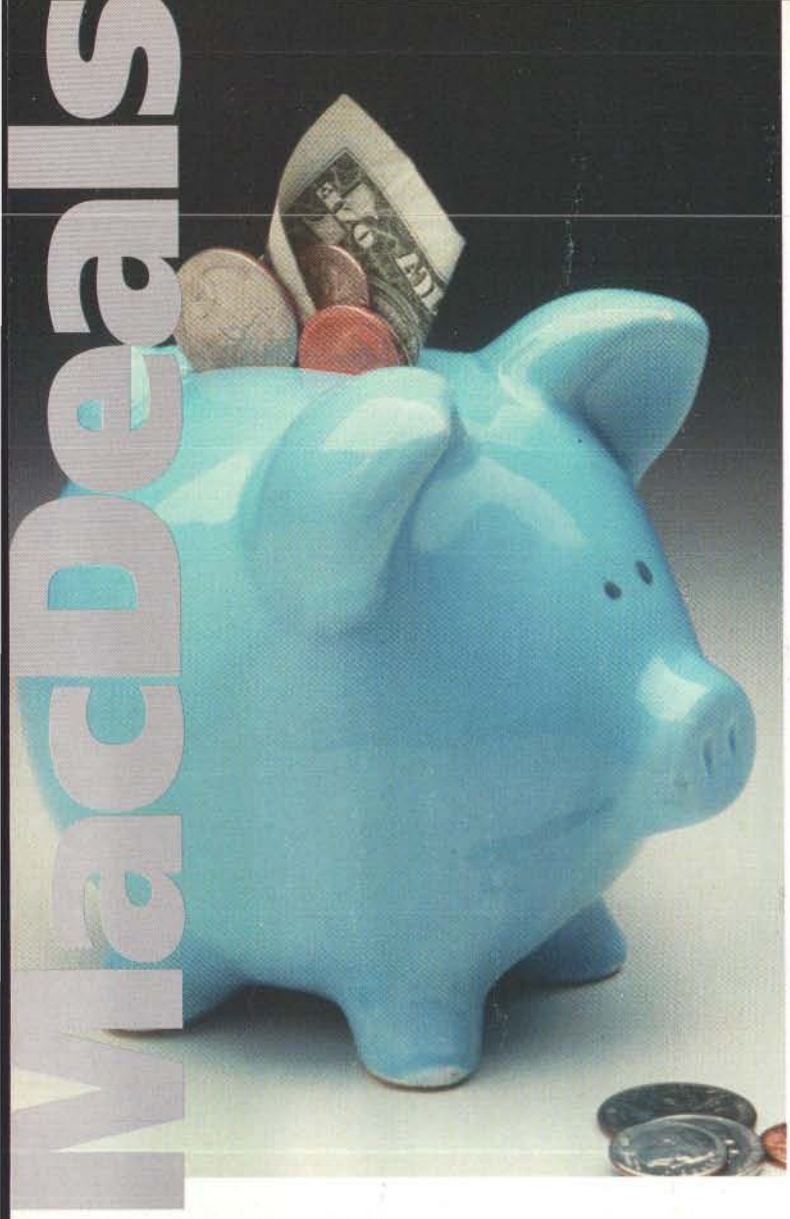

Nomaï's 44MB and 88MB cartridges add life (& save money)

They're the longest lasting cartridges you can buy.

The Nomaï family of 44MB and 88MB SyQuest compatible, removable cartridges use IBM Diamond Like Coated (DLC) media for maximum resistance to shock and dust.

That's why Nomaï have the confidence to back them with a five year warranty.

Which must give these SyQuest-guaranteed cartridges the highest data storage performance available today.

Just compare Nomaï with any other cartridge on the market.

Both the 44MB and 88MB cartridges have a Mean Time Between Failure (MTBF) of more than 50,000 hours. That's over five years in continuous use.

Both have recoverable error rates of 1 in 10^{10} bits read, and a non-recoverable rate of 1 in 10^{12}. In other words, one in ten billion and one in one thousand billion.

And because they're guaranteed by SyQuest to be compatible with all drives using their 44 or 88MB 5.25" mechanisms, they'll always fit in.

To get hold of the cartridges with more life in them than most, at prices from £35* for the 44MB and £45* for the 88MB, call your local dealer now.

*Prices excludes VAT

SOLD Under LICENCE From SyQuest® 100% COMPATIBLE

IBM media HQ DLC
HIGH QUALITY DIAMOND LIKE COATED

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Norton Utilities. Emergency Surgery for Macs.

If you've ever experienced a disk crash, inadvertently erased important files or even ditched a whole disk by mistake, you'll have felt very sick indeed. Sicker still when you've had to explain the problem to your colleagues and customers.

Now Norton Utilities can put both you and your Mac firmly on the road to recovery. When all else fails, new Norton Utilities 3.1 will deliver lost data. What's more it's also accelerated for the Power Macintosh.

In fact, Norton Utilities 3.1 is the most complete repair and recovery software available. For a speedier recovery, call your local dealer now. RRP: £99*.

RRP £109*

Norton Administrator For Networks 1.5 Can Manage.

How do you know if network users are violating your copyright agreements? How will you know exactly what software is running on the network, and whether it's running on DOS, Windows, Macintosh, UNIX or OS/2?

How can you do all this on a network that runs different platforms, and know how often different software is being used?

Easily. Just install Norton Administrator for Networks 1.5. RRP: £299.

RRP £299*

Vaccinate against disaster with SAM.

Sam is the most comprehensive anti-virus package available and even has a system of automatically updating itself from Symantec's bulletin board. Whenever a new virus is discovered, SAM will keep you prepared.

Scanning for viruses is also automatic, and continuous. Even compressed files are investigated for the presence of viruses.

For the best protection available, call your nearest dealer. RRP: £69*.

RRP £79*

SAM Administrator 4.0 protects your network.

With SAM Administrator, there's no need to make multiple installations on your network. It also allows remote configuration of all SAM parameters.

Meanwhile, a distribution log tracks the progress of all SAM distributions and you are quickly informed of any updating problems. So your network will never be caught napping.

For network-wide virus protection, call your dealer and ask about SAM Administrator 4.0. RRP: £599*.

*RRP exclude VAT

RRP £599*

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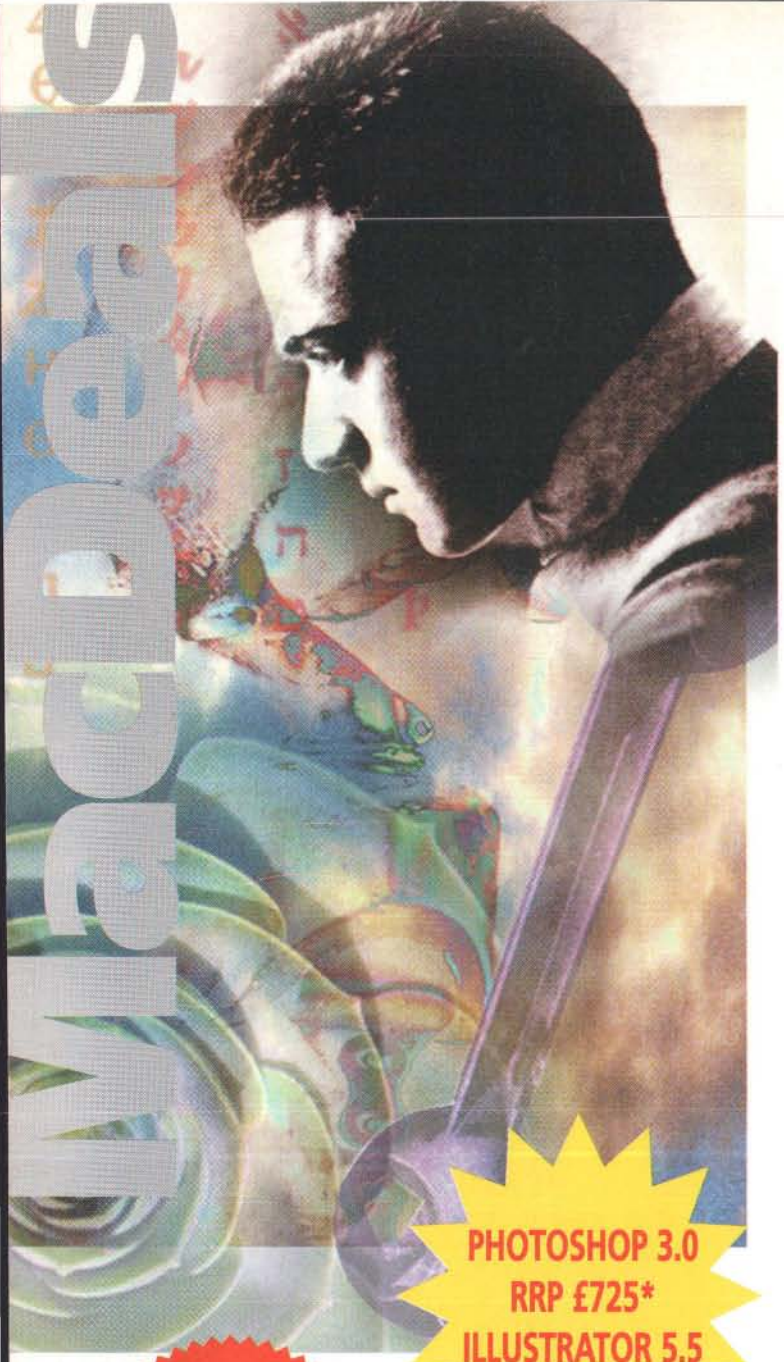

PHOTOSHOP 3.0
RRP £725*
ILLUSTRATOR 5.5
£480*

Accelerated for Power Macintosh

New Adobe Photoshop 3.0 & Illustrator 5.5 Will Take Your Breath Away.

The world's top photo design and production tool has just drastically increased its lead. Its new version brings Photoshop into realms of creativity that until now were only accessible with a high-end system.

Adobe Photoshop 3.0 now allows you to work in layers. That means that you can build up pictures without having to worry that placing one element over another will obliterate it. Move the overlayed object and the object behind will still be there.

And because the different layers are totally independent, you can use different filters on each, individually. The different layers can then be masked to control their relative transparencies.

Think how much more flexible this will make photo-composition and design.

There's also no need to keep saving different versions of your work. New version 3.0 allows you to make multiple undos.

Adobe Illustrator, the best-selling Macintosh illustration program, gives you powerful yet easy-to-use drawing tools and superior text-handling features, in the same league as Aldus Freehand. Graphic artists and enthusiasts, technical illustrators and desktop publishers will find unlimited creative options in this innovative design program.

This latest version, 5.5, is available as a Deluxe Edition on CD-ROM, as well as regular Macintosh and PowerMac versions. Its new features include 220 different fonts, Adobe Acrobat™ and Type on Call™.

Acrobat is the most complete file transport software available for the Macintosh. It allows cross-platform transfer. And its also excellent for communicating between Illustrator and Photoshop.

Buy the latest, greatest version of Illustrator 5.5 for just £480*, and Photoshop 3.0 for £725*. Call your local dealer now for further details.

*RRP excludes VAT

Adobe™

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Sony Trinitron™ Monitors Break Through The Final Frontier.

Space. Until now you had to find a lot of it if you wanted a top quality monitor. That was until Sony unveiled their new **15 inch Trinitron™ monitor**, the most compact ever.

Now you don't need a huge amount of space (or money) to appreciate the superiority of Sony's Trinitron tube technology.

Since its inception, Sony has continued to develop Trinitron technology, to provide more precise, subtle displays than conventional shadow mask/FST systems.

Its crisp, accurate display makes it ideal for design use, whilst it compact flexibility gives it a role in any office.

That's because Sony have managed to cram more than just the latest Trinitron technology into the Multiscan™ 15sf. Its flat screen and continuous scanning ability reduce distortion, to give a precise image.

Its new, friendlier control panel provides edge-to-edge position for maximum display size.

An exceptionally high refresh rate virtually eliminates screen flicker, and the display makes the best possible use of its compact dimensions.

And the Multiscan 15sf saves energy as well as space. It conforms to both EPA EnergyStar and Nutek requirements.

To cross the final frontier in monitor design for only £395 RRP call your local dealer now. *RRP excludes VAT

SONY®

Sony and Trinitron are registered trademark. Multiscan is a trademark of Sony Corp, Japan.

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ORDER FROM YOUR LOCAL DEALER

MacDeals focuses on some of the very best products in the Mac marketplace to give you a chance to order them at extremely competitive prices from an established Mac dealership. All the dealers listed are fully accredited by Principal Distribution, and promise you expert advice and friendly service for these and all your other Macintosh requirements. If you prefer, we can put you in touch with your nearest local accredited dealership. Call us on 0706 832 000 for details or advice.

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TAG Business Systems Ltd
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Berkshire RG1 4QS
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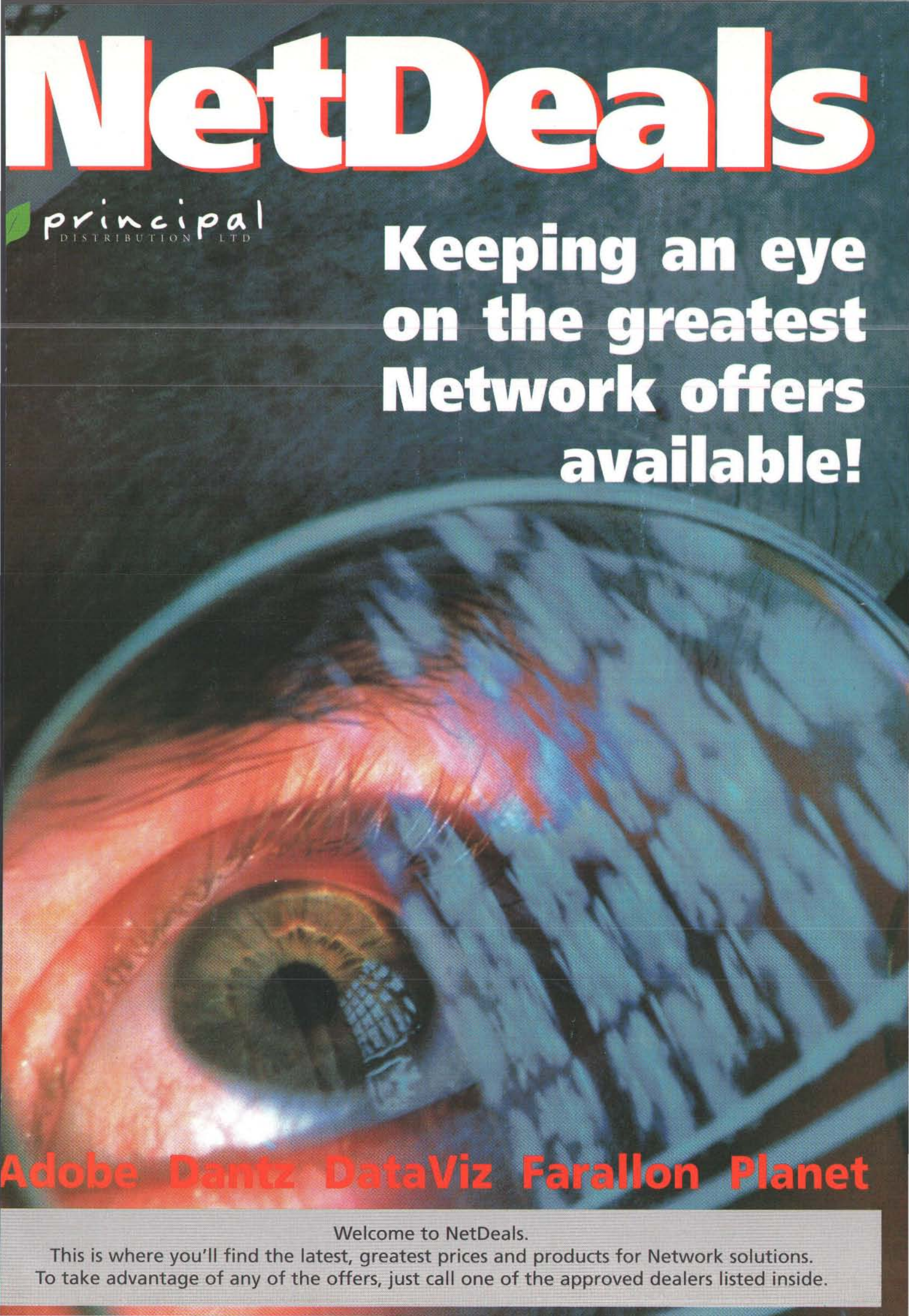
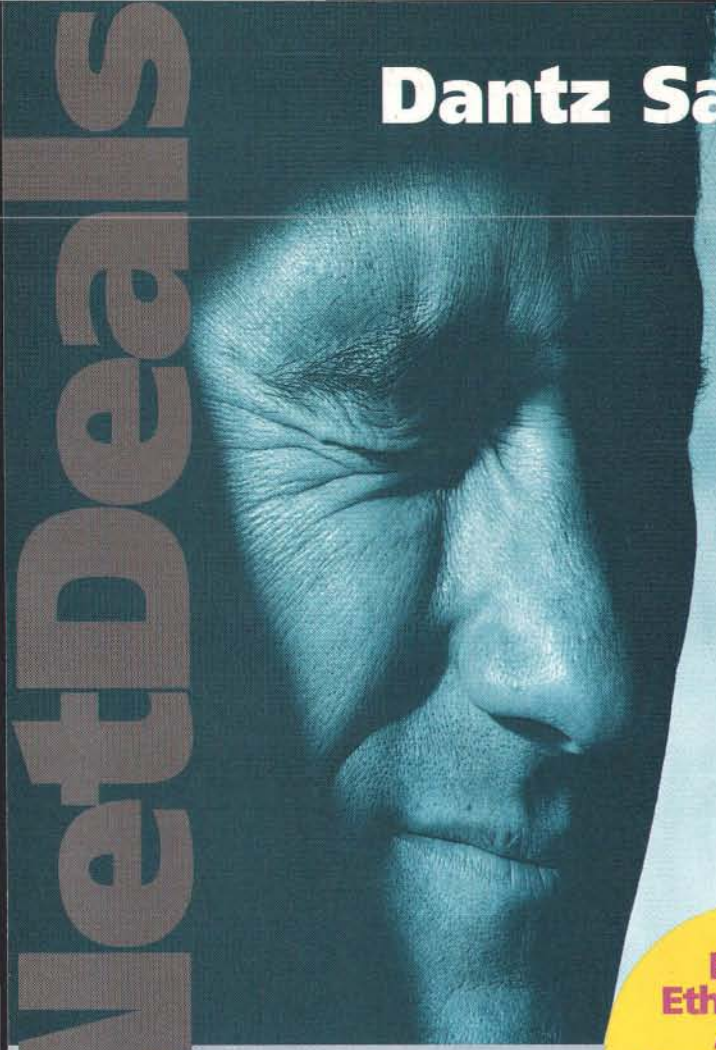


Welcome to NetDeals.
This is where you'll find the latest, greatest prices and products for Network solutions.
To take advantage of any of the offers, just call one of the approved dealers listed inside.

NetDeals

Dantz Saves You Grief.

dant



Start using Dantz's **Retrospect**, the best-selling Macintosh backup software, and your data will be safe from hard disk crashes, viruses, accidental deletions and natural disasters.

Simply point and click to create a script. Then schedule the scripts so your backups can run automatically on any day or at any time. Retrospect will remember to backup, even if you forget.

Backup to any storage device - SyQuest, Bernoulli, optical, tapes, floppies, DAT, or file servers. Retrospect also supports loaders/changers. So your backup can run unattended for days!

You buy backup software to restore files when you need them so Retrospect tracks the most recent state of your hard drive, replacing every file and font in its original location for fast, exact restores.

Data encryption and extensive password protection features ensure the highest level of security for confidential files. And Retrospect's built-in compression cuts backups down to size, without compromising performance.

Retrospect grows as your network grows. You can support additional Macintoshes by purchasing Remote 10 or 50 packs, making it as easy to backup 50 Macs as it is to backup one!

Retrospect Remote RRP: £339*. Retrospect 2.1 RRP: £189*.

*RRP excludes VAT

Buy 5 EtherWave AAUI transceivers & save £50 on Retrospect*

Ethernet made as easy as Localtalk

You need Ethernet speed! Farallon **EtherWave** 10-Base-T products let you daisy-chain computers and printers in a snap. No wonder it was *MacUser USA*'s Product of the Year for 1993.

Self-terminating EtherWave allows you to add several PCs, Macs, servers and printers to the same 10BASE-T port. Or you can use EtherWave to create small isolated networks of up to 8 nodes without a hub. Just think how easy and cost effective this networking revolution could be for you!

Adaptors make it possible to add PowerBooks, PC laptops and LocalTalk Printers to the Ethernet network, too.

EtherWave AAUI RRP: £114.99. LC & NuBus Cards RRP: From £204. (Excluding VAT.) Call your local dealer now for full details.

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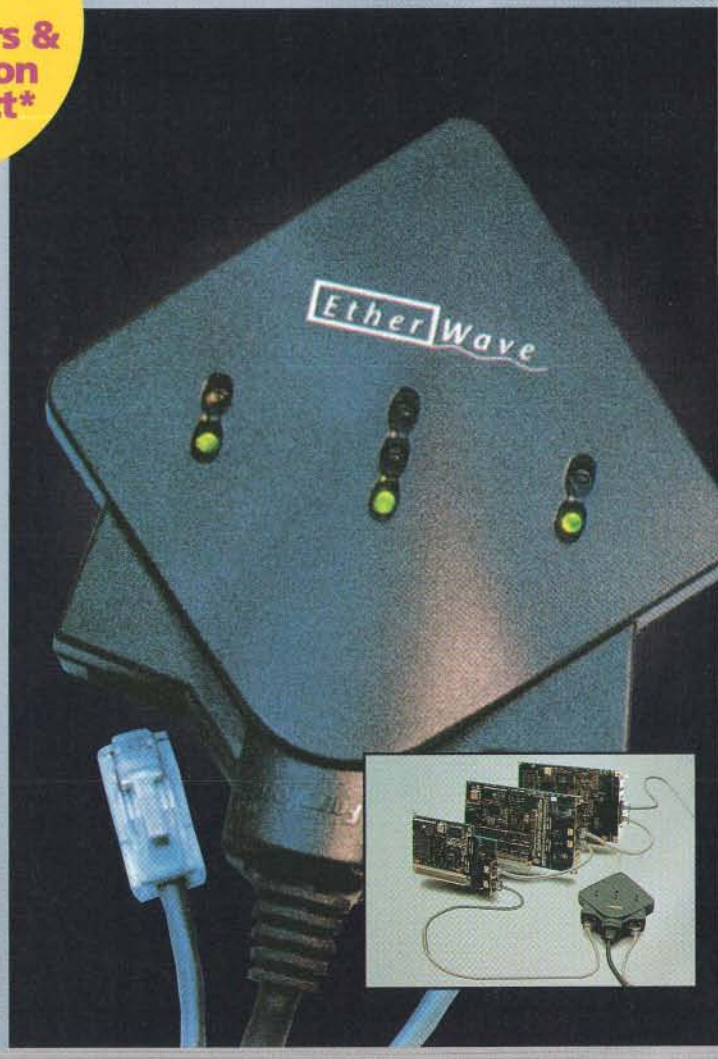
Farallon



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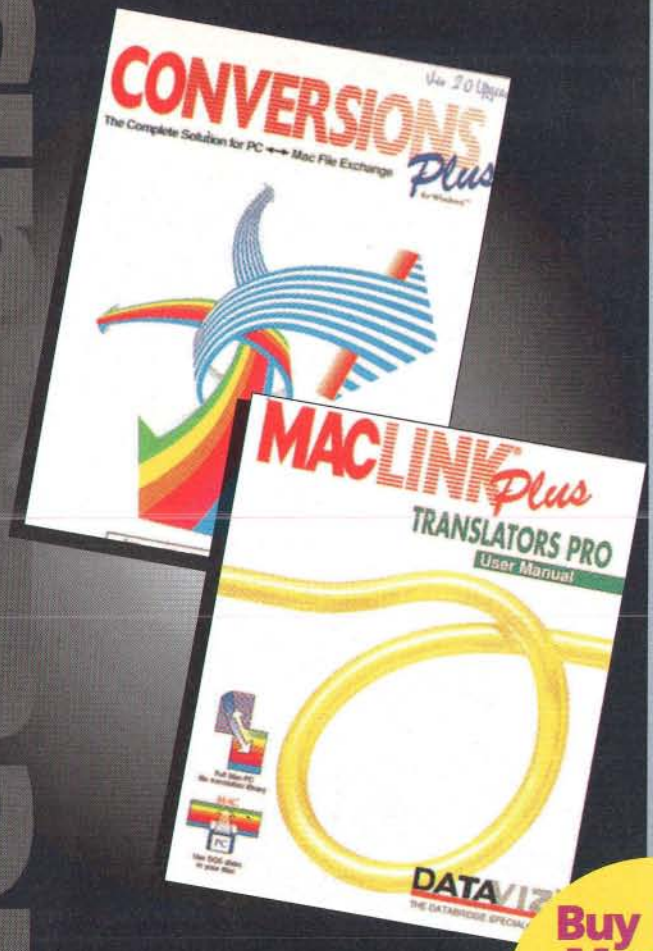


Let Mac Speak Unto PC...

...And vice versa.

Install **Conversions Plus for Windows** from DataViz on your PC and you'll find that PC to Mac file exchange is a piece of cake. An extensive library supports the translation of over 700 file types.

So, whether you're linked via a network, or using diskettes, when someone's Macintosh talks, your PC can listen.

Conversely, **MacLink Plus** gets Macs in touch with PCs. To read PC disks, just insert them into your Mac and drag them over DataViz's document converter. Corresponding Macintosh files will then appear on your desktop as if by magic!

Both Conversions Plus for Windows (RRP £109*) and MacLink Plus (RRP £129*) support all the top PC and Mac programs, including WordPerfect, Microsoft Word, ClarisWorks, Ami Pro, MacWrite, Quattro Pro and many more. *RRP excludes VAT

DATAVIZ
THE DATABRIDGE SPECIALISTS

Buy both MacLink Plus and Acrobat for just £129*

Acrobat's File Exchange Trick.

Exchanging files across platforms is simple enough when you're dealing in raw data. But try sending a formatted document across and you're in for trouble.

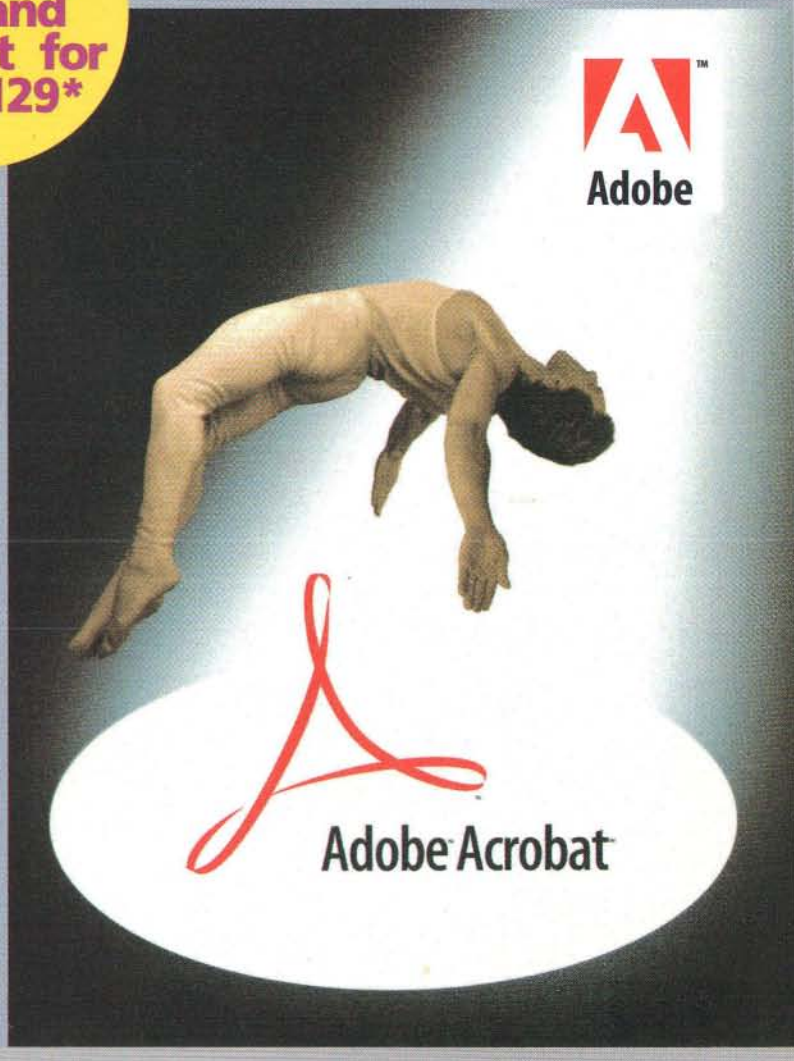
Even if all the graphical elements translate, the chances are that fonts will be mistranslated or absent, so the format is lost. And as for printing...

Adobe Acrobat solves all these problems at a stroke. Once installed, it will convert documents from your favourite applications into a Portable Document Format (PDF) file. Any computer with Acrobat software can then make complete sense of the file, however large.

If a font is not present in the receiving computer, a replacement will be found by Adobe's Multiple Master font technology. The substitute will have the same metrics as the original, leaving the format intact.

All documents are rendered equally well on any display or monitor. And you don't even need the application running on the recipient to print it. Pages will print perfectly in black and white or colour, from 200 to 600 dpi.

The full flexibility of Adobe Acrobat is available now from the dealers listed. Call one now and put an end to your format problems. *While stocks last



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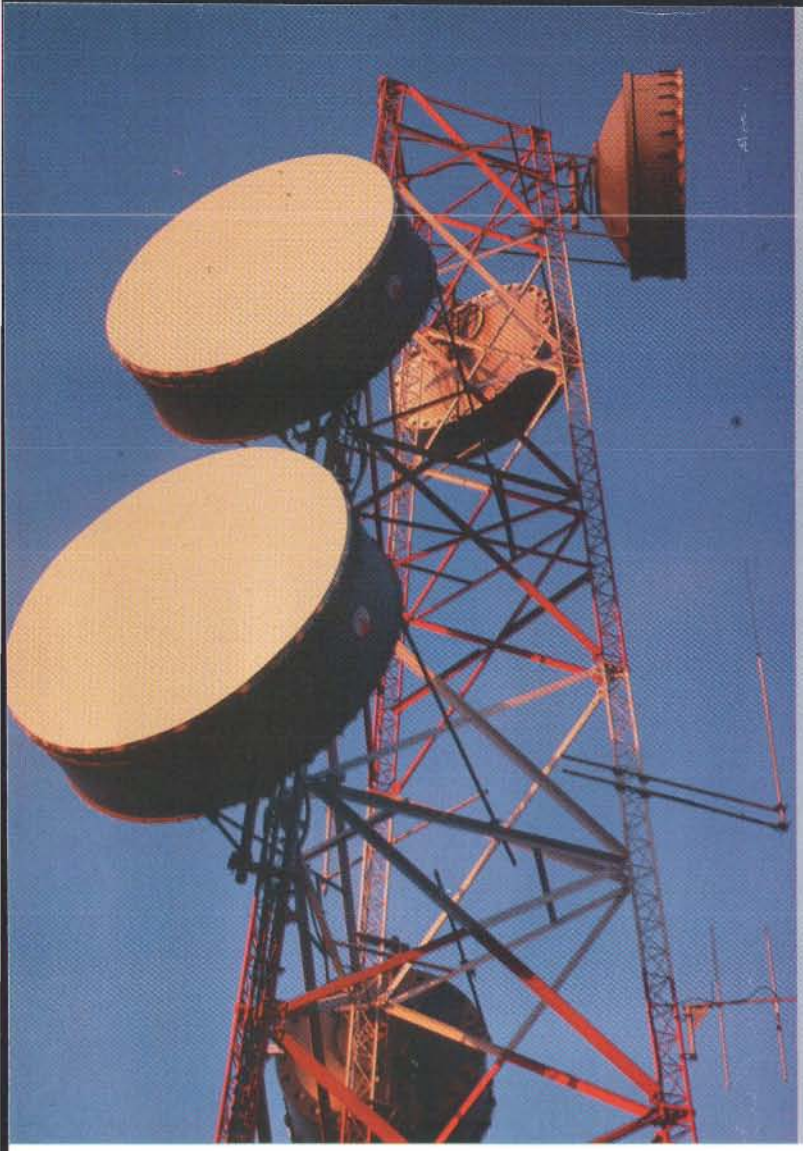

Planet Talks Digital.

If you need to send great chunks of data rapidly and accurately to anywhere in the world, you need ISDN.

ISDN (Integrated Signal Data Network) is the fast, accurate way to send data, text, images and information to remote computers, networks and systems.

Voted 'Best Buy' in the August 1994 edition of MacUser, **Planet's ISDN 2** card will put your Mac securely in the digital age of communications.

The Planet ISDN 2 has already been used successfully by over 10,000 people in 24 countries. And its huge sales are not just due to its performance. The Planet ISDN 2 card costs just £999*. For this price you get free EasyTransfer Light software, with optional TheLink, QuickMail bridging, Video Conferencing and Image database access.

You'll also get unlimited free technical support. And if you have a Power Macintosh, you'll still be able to use Planet. Our half size 7" NuBus card slots snugly into the Power Mac 6100.

Get your Mac talking loud and clear with Planet ISDN 2. Call your local dealer now for details.

*Price excludes VAT

The idea behind NetDeals is to focus on some of the very best networking products in the Macintosh marketplace, and to give you a chance to order them at extremely competitive prices from a Mac dealership.

All the dealers listed below are fully accredited by Principal Distribution, and promise you expert advice and friendly service for these and all your other Macintosh requirements.

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Tel: 0252 377 424

NETWORKS AND COMMUNICATIONS - DIVISION -

Corporate Computers (MID)
Tel: 081 570 8899

DIRECT "BUILT ON SUCCESS"
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CodeWarrior

Publisher: MetroWerks Inc.
Distributor: Full Moon Software (0727 844232)
List price: £275 (Gold Edition CD); £69 (Bronze Edition lacking PowerPC native compilers).
Pros: Easy to use, integrated environment; excellent debugger; can create 68K or PowerPC apps.
Cons: Contains few code examples making it a difficult environment for novices.
Macworld rating: ★★★★

AppleScript, PowerTalk and QuickDraw GX – the list of new Mac system technologies marches on, providing users with even more features to consume their memory and disk space, not to mention the contents of their wallets. But spare a thought for the poor developers, forced to toil away on the next version of their application, armed with a limited choice of developer tools.

Until recently the development choice has been between two main contenders: Apple's Macintosh Programmer's Workshop (MPW) and Symantec's Think C, each of which have strengths and drawbacks.

MPW is powerful and extensible, but is a slow, unwieldy, unfriendly beast of an environment, which is enough to deter many of those just starting programming. Think C is easy to use, takes up less RAM, is fast and includes an integrated compiler, editor and debugger, but the latest releases have been buggy and the tools for PowerPC development have been disappointing.

Step forward a new pretender: CodeWarrior from Metrowerks, a product that some would have you believe is entirely responsible for the existence of numerous PowerPC native applications.

Promising an environment as easy to use as Think C, with the power of MPW, together with C, C++ and Pascal compilers for both PowerPC and 68K Macs, CodeWarrior has a lot to live up to. Does it justify the hype and will it become the development tool of choice used to build the next generation of best selling applications ?

One stop shopping

The first thing you notice about the CodeWarrior package is how comprehensive it is. The Gold Edition CD comes with C, C++ and Pascal compilers, for both the 68K and Power Macintosh; full electronic documentation; sample code; a source level debugger; and a fully functional application framework. Add to this a full version of MPW, together with MPW pre-release versions of the C and C++ compilers and this is clearly an impressive package.

The Bronze Edition is the same, except it does not include compilers for generating PowerPC applications. The user interface for all the compilers is the same, irrespective of whether you are developing in C, C++ or Pascal for 68K or Power Macintosh.

To build a 68K Macintosh application in C or C++, you use the MW C/C++ 68K application. This builds an application which can then be run on a 68K Macintosh and you use the 68K version of the CodeWarrior debugger to debug it. To create a PowerPC version of the application you just take the same source code and compile it with the Power PC version of the C/C++ compiler.

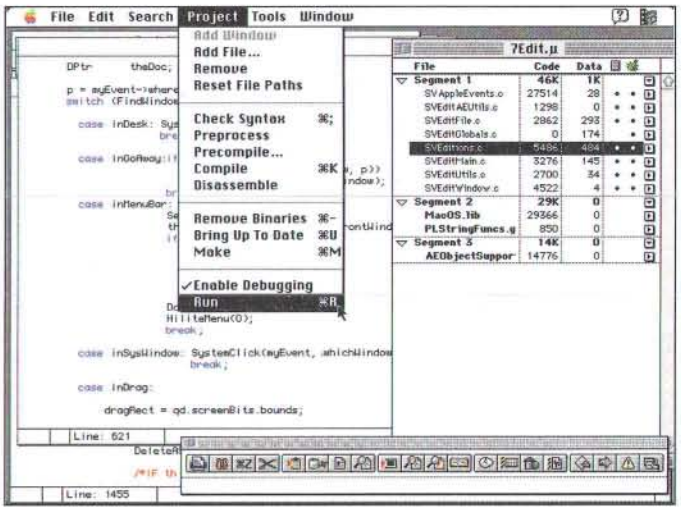
All compilers are 'fat' binaries – which means they include both 68K and PowerPC code, so that they can be run on a 68K Mac or in native mode on a Power Macintosh. This allows you to use either a 68K or a Power Macintosh as your development machine, irrespective of the platform you are creating your application for.

To create a 'fat' version of your application, you compile the code using both the 68K and Power Macintosh versions of the C or Pascal compilers and copy the 'CODE' resources from the resource fork of the 68K application to the resource fork of the PowerPC application – an Applescript script is provided to automate this process.

In fact, CodeWarrior is the only fully native development environment for the Power Macintosh, MPW and Think C both run under emulation.

Flying tonight

CodeWarrior looks, feels and behaves very much like Think C, so



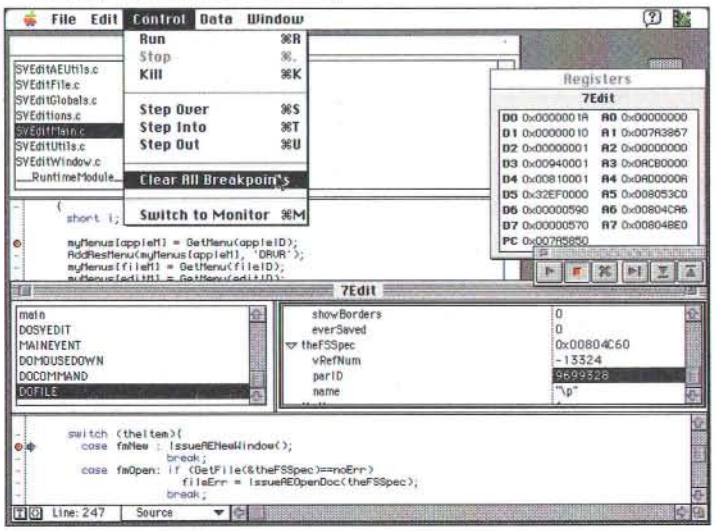
Full-on coding
Project management is among CodeWarriors best features, giving you fast access to all of the components in your application.

anyone familiar with that environment could be up and compiling with it in only a few minutes. Applications are edited, compiled, linked, run and debugged all from the same place – the same integrated approach taken by Think C – and far faster than the separate tools and scripts used by MPW.

Applications are divided into projects that contain all the source code used to build the application, together with any libraries that you need to include. CodeWarrior includes a fast compiler and an incremental linker, so that when you make a small change to a project, only those files that need to be are recompiled and linked. This makes it much faster than MPW and as least as fast as Think C.

When you compile your application, every compilation error is written out to the error log window and

continues page 67



Bug hunt
CodeWarrior features excellent debugging features for both 680x0 and PowerPC code.

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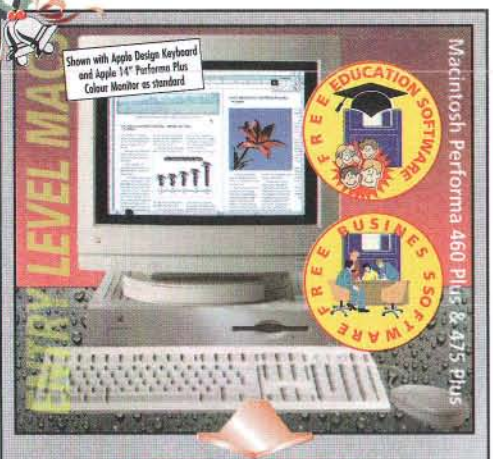

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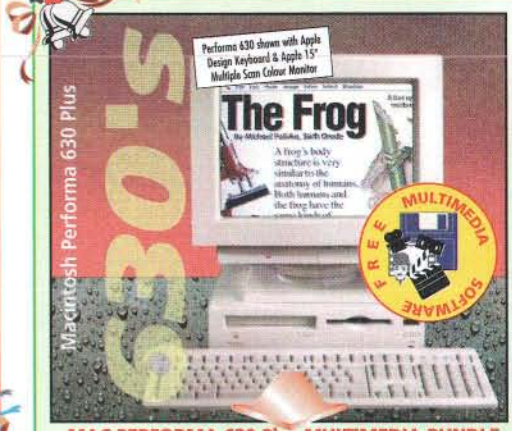

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you can go directly from the error message to the offending line of source code. This makes getting code into shape as painless as possible.

The CodeWarrior environment features a floating tool palette that contains icons representing commonly selected functions such as printing, filing, compiling and running applications. As with many applications, the icons tend to be confusing at first, but you will soon be using them in preference to the menu commands.

One of the most important parts of any development environment is the debugger and, fortunately, CodeWarrior's is excellent. The compiler generates a symbol file which contains debugging information. When the application is run, depending on the environment, either the 68K or Power Macintosh version of the CodeWarrior debugger is launched.

This includes features similar to those found in other source level debuggers such as the Think C debugger, SourceBug or SADE. You can set breakpoints, step through source code line by line, inspect the value of variables and complex structures and invoke the services of a low level debugger such as MacsBug.

The debugger is easy to use and even those new to programming should be able, with a bit of practice, to track down all but the most obnoxious of bugs.

The Last Word

Moving to CodeWarrior is almost suspiciously easy. For those with MPW code written in C, C++ or Pascal using the Universal Interfaces (required to build applications for Power Macintosh) the transition should be straightforward. Think C users can even use a tool that converts Think C projects into CodeWarrior projects.

It offers all that a developer needs: it can run native on Power Macintosh or on a 68K machine and be used to build applications for both platforms, using C, C++ or Pascal. You can use CodeWarrior to write and debug applications, code resources such as system extensions and drivers and Power Macintosh shared libraries.

For those new to programming, the CodeWarrior environment is easy to get used to and by working through a few examples, you should be creating your own applications in no time.

For experienced developers tired of battling with MPW and Think C, CodeWarrior is a welcome, and overdue, addition to their programming tool chest. **– Jon Lansdell**

Disk Maintenance

Norton Utilities 3.1

Publisher: Symantec (0628 592222)
List price: £79
Pros: Strong disk repair and basic data recovery; background diagnostics; improved interface; Power Mac versions of some modules.
Cons: No System 6 support; weak back-up modules; some valuable features from previous versions dropped; some lingering bugs.
Macworld rating: ✪✪✪

Norton Utilities for Macintosh 3.1, the long-awaited upgrade to Symantec's flagship data-protection and -recovery utility, is leaner, meaner, and faster than ever before. Yet, though built on the solid foundation of NUM 2.0.6 and bolstered by Public Utilities 2.0, NUM 3.1 is surprisingly uneven.

A six-button palette gives access to Norton Disk Doctor, UnErase, Volume Recover, Speed Disk, Norton Fastback, and System Info. These and more are also accessible from the Utilities menu.

No single disk-repair utility is best at everything, but Norton Disk Doctor leads the current pack. It checks volume directories for corruption, which it can usually correct. It also cures minor file anomalies and media damage. The new version finds and fixes problems that NUM 2 and MacTools' DiskFix don't even detect, and is much faster than both.

The new Prevention feature checks for directory damage at start-up, at shutdown, and/or after idle time. FileSaver can also check for media damage and inform you of the need to optimize or back up. When it spots a problem, an alert flashes and prescribes the appropriate NUM module – an excellent feature, as the best use of NUM is fixing small problems before they become big ones.

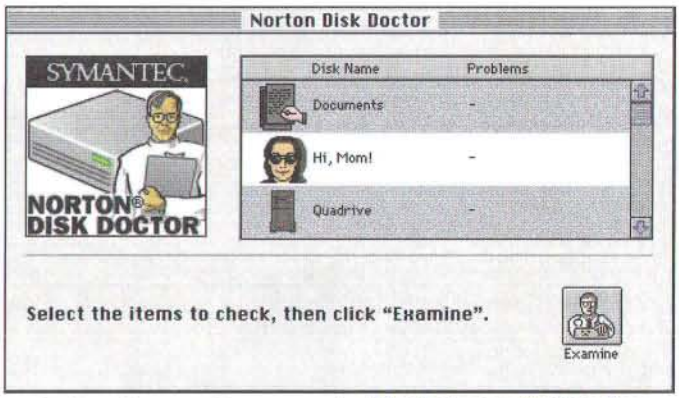
When Disk Doctor can't fix a volume, it sends you to Volume Recover, which offers to restore the volume "in place" based on a FileSaver directory "snapshot." In my tests, it worked flawlessly and fast.

UnErase can recover files from a damaged volume or rescue files that have been deleted from the Wastebasket. Of this module's several new features, most welcome are the ability to sort scan results by degree of recoverability and the option to filter unrecoverable files.

However, the new UnErase omits some features that were in NUM 2. This simplifies the interface and the everyday recovery of trashed files, but it poses big problems for big data-recovery jobs. If you have complete, current backups, these omissions won't affect you, but they reduce NUM's value as a serious data-recovery tool – something for which it used to be the best commercial option.

Backing Up

Your first line of defence against data loss should always be backups. But if I had to use Norton Fastback, which replaces the older Norton Back-up… well, I wouldn't. To start with, it's not backward-compatible; you need to keep Back-up around to access pre-Fastback files. This might be acceptable if Fastback were clearly superior, but it isn't.



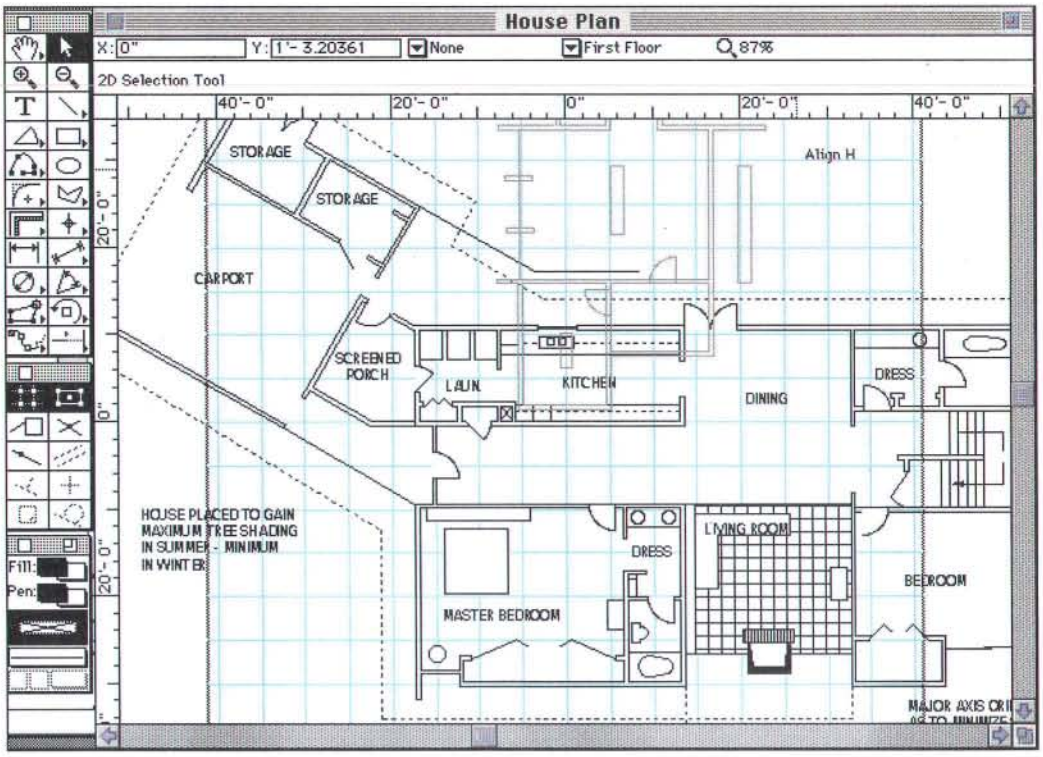
Not just a pretty interface
Disk Doctor's improved performance permits more, and more efficient, diagnostic routines and fixes.

Fastback can back up changed files only for entire volumes, not custom sets of files. If you attempt two types of backups for a volume, Fastback "forgets" the first one. You can't view or edit a set. Fastback can't create sets of multiple volumes; you can run single-volume sets in sequence, but Fastback rewinds tapes to the top and searches for free space within each set, which can add hours to such routines. In short, Fastback is the wrong choice for a package promising "comprehensive data protection."

The Last Word

A utility collection such as NUM should be strong in all major departments. Had Symantec left well enough alone with UnErase and included a first-rate back-up module, that would have clinched it. Instead, NUM is only neck and neck with the competition, which happens to be Symantec's own, patchy MacTools 3.0 (4.0 came out at press time).

Still, for its best features I recommend this new version of Norton Utilities highly. **– Peter Stoller**



Welcome home
What this still picture can't show is that Blueprint 5 on a Power Mac can rotate or zoom drawings as fast as you can issue the commands.

2D CAD software

CAD

Blueprint 5.0

Publisher: Graphsoft
Distributor: Gomark, 071 731 7930
List price: £210
Pros: Fast operation; nice feature-set for specialized drafting; reasonable price.
Cons: None.
Macworld rating: ★★★★

Graphsoft is a Macintosh success story. At each revision, its products add useful features and yet run faster than their predecessors. Microsoft's Word 6 programming team could learn a thing or two from Graphsoft.

Graphsoft's Blueprint is an object-oriented drafting program that makes it easy to do the kind of drawing that used to occupy students for hours in traditional blueprint-oriented drafting classes.

This is not a state-of-the-art CAD package: it has no 3D features (which are available in Graphsoft's MiniCad), surface modelling, or animation, as the architectural programs that support 3D walk-throughs do. It is, however, an excellent 2D drafting program listed at just over £200.

Blueprint's key new feature is improved speed. Version 5 comes with 680X0 and Power Mac programs in the same disk set. In 680X0 mode Blueprint 5 performs operations from 1.5 to 2 times as fast as Blueprint 4 does. On a Power Mac, it's even more impressive (see Macworld Lab's speed test results below). In practice, this means redraws of a nice 30-by-40-inch sheet covered with detail (a 250K file) are nearly instantaneous on a Power Mac. The trademark Graphsoft chatty cursor, which reports and changes shape as you move it across the objects in a drawing, now carries no speed penalty. This program feels significantly faster than equivalent 2D CAD programs on a midrange Sparcstation. That's quite an accomplishment, both for Graphsoft and for Apple.

Blueprint 5 also has enough new features to justify a whole-digit version change. To precisely position objects on a page, a new Nudge command lets you move whole objects one pixel at a time.

An Offset tool lets you specify an object offset, and the Move Page tool shifts the page frame relative to the drawing. New drafting convenience features include a Tape Measure; a Protractor; and a 2D Properties Display that shows area, perimeter, and centroid, among other functions.

Blueprint's already nifty tools for handling objects in walls in architectural drawings have been augmented with Y-Join, Butt-Join, and Edit Symbols in Walls. A unique feature, TrueType to Polyline, converts text in a TrueType font to a set of Blueprint lines, making possible unusual font tricks such as distortions and stretches for dramatic titling and labelling.

Blueprint 5 ships with thoroughly educational sample drawings and a fairly complete symbol library, and exchanges files in PICT, EPS, and DXF formats.

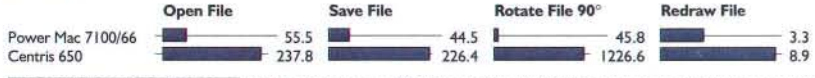
The Last Word

Blueprint has always been one of the most intuitive Mac programs for drafting, and that tradition continues. Although some pseudo-3D features (simple extrusion, for example) would be nice, Blueprint users can step up to the 3D world of MiniCAD 5 with minimal training. For plain old 2D drafting, Blueprint has a rich, easy-to-use feature set and is admirably fast. The Power Mac version, in particular, is a first choice for large architectural or engineering diagrams. **– Charles Seiter**

MW LAB

How much faster is Blueprint on a Power Mac?

Times are in seconds. Shorter bars are better.



BEHIND OUR TESTS The test file was a 1.4MB Blueprint file with 8912 objects. Each computer system had a 16-inch monitor set to 256 colours, 24MB of RAM, and an external 1.3GB Micropolis drive. Blueprint was allocated 16MB of memory. **– Macworld Lab testing supervised by Danny Lee**

Kodak DCS420

Manufacturer: Kodak (0442 61122)
List price: £8,199
Pros: Good quality images, practical solution, PCMCIA storage; Nikon components.
Cons: Lens focal lengths; some contrast problems.
Macworld rating: ✪✪✪✪

The DCS 420 is Kodak's third generation of digital camera in three years, and it's certainly the best yet in terms of handling and image quality. Newspapers, magazines and anyone who needs to capture good digital photographs 'in the field' should find the 420 interesting.

The stupendous manufacturing cost of Kodak's Megapixel CCD technology means that the prices aren't coming down much though - the 420 costs £8,199. This is a lot for something that looks and feels like an £800 Nikon 35mm camera, but if you think of it as a portable scanner, the price comes into perspective.

Like Kodak's previous digital cameras, the DCS 420 uses a Nikon 35 mm camera to provide high quality optics and exposure electronics off-the-shelf. The Nikon N90 used in the 420 is an excellent modern camera, with advanced autofocus and exposure controls. It is very easy to use, while Nikon's lenses are legendary for their quality.

Kodak adds a new one-piece back and chunky base unit, which puts a large CCD sensor behind the shutter where the film would normally go. A small LCD and a couple of buttons in the back let you read the remaining frames, delete the last frame, and set the SCSI ID. A tiny microphone gives the option of recording 'sound bite' captions with each pic.

Kodak's M5 CCD has a resolution of 1,012 x 1,534 pixels, which gives a usable 7x11-inch halftone at typical newspaper screen rulings, or about 4.5x6.5-inches at the values used in Macworld. It's more than enough for good A4 dye sublimation prints.

The CCD's response is fast enough to work with normal shutter speeds, and the standard sensitivity is equivalent to ISO 100 film, but can be increased to 200 or 400 with progressive loss of quality. If you want more resolution, Kodak has announced a version called DCS 460. This has a 3,060 x 2,035 pixel M6 chip, which would be enough to fill a Macworld front cover. The 460 works at normal shutter speeds, but its 18 Mb images take so long to compress and store that you can only take one pic every 12 seconds. The price looks like coming out around £13,000.

The big problem with basing the 420 on a standard camera is that the CCD is a lot smaller than a 35 mm film frame. This has the effect of increasing the focal length of whatever lens you fit by 260 per cent. A standard 50 mm lens becomes a 130 mm telephoto, and it is practically impossible to get even modest wide-angle effects.

Exotic variations

The standard DCS 420 is a colour camera, using stripe filters over the CCD to build up colours from a single exposure. This occasionally gives colour fringes on fine details and metallic highlights, and we found yellows reproduced poorly. Kodak can supply the 420 as a black and white camera for higher image quality, and there's an infra-red version for exotic applications.

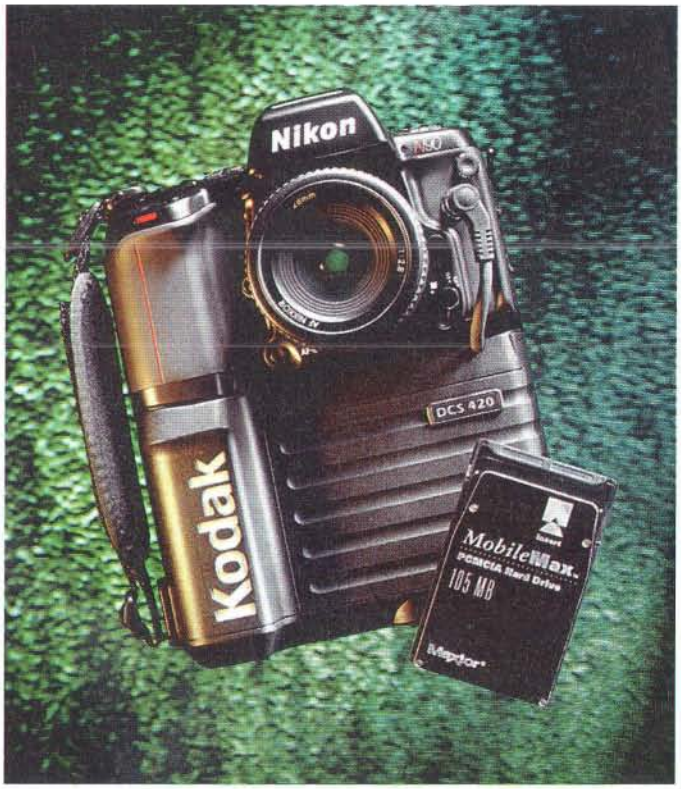
The adoption of 12-bit sensitivity helps reduce earlier cameras' problems with high contrast images. It's not a complete cure through, and on a bright day you have to take a lot of care with exposure or you'll lose highlight or shadow detail.

Previous DCS models have used hard disks to store the resulting image files, with a SCSI port for transferring files to a Macintosh. The snag was that when the camera disk was full you had to start wiping files to free up more space, so if you were out in the field you needed to take a PowerBook to store the overflow.

The new 420 solves the problem by adopting high capacity 105 Mb PCMCIA cards, which can hold 64 images. There's a flap in the camera's base unit to take these cards, and when one fills up you can pop in a new one, just like film. The cards are small, tough and lightweight, and you can carry enough for a day's shooting in your pocket.

PCMCIA readers are just coming through for the Macintosh, but if you haven't got one, the DCS 420 still has a SCSI port, so can download directly from the cards. Kodak includes a choice of cables and SCSI terminators to either link the camera directly to the Mac, or to add it to the end of a SCSI chain. Our camera froze the Mac when used on a chain, but the direct link was fine.

A Photoshop plug-in is supplied to read the card images. This gives you a 'light-box' preview of all the images on the memory card, in mono or colour, plus the option of previewing individual pics at larger sizes. You can delete individual images or transfer them to a hard disk for long-term storage. If stored in the compressed DCS format they only occupy 1.5 MB.



Carry the Card
The use of PCMCIA storage cards makes the DCS420 easier to carry, and you can shoot 60 or more images at a time.

A useful control alters the colour balance to match the original lighting – daylight, flash, tungsten and so on. Most worked well, but with fluorescents we found we still needed to fine-tune in Photoshop.

Double-clicking on one of the images downloads the full resolution image as a 4.4 Mb file into Photoshop, where you can manipulate it and save it in normal formats. The plug-in also lets you control the camera directly from the Macintosh, which gives an instant preview of the pics as they are taken.

The Last Word

The DCS 420 is the best of the portable cameras on the market today. It's very practical to use, and the image quality is respectable – although not as good as the large format digital studio cameras, it's way ahead of the £500 Apple QuickTake 100. Kodak won't have everything its own way for long though. Nikon is about to start shipping its own, purpose-built digital cameras, the E2 and E2S. They'll cost a bit more than the 420, but they don't have the Kodak's problem with lens focal lengths. **– Simon Eccles**

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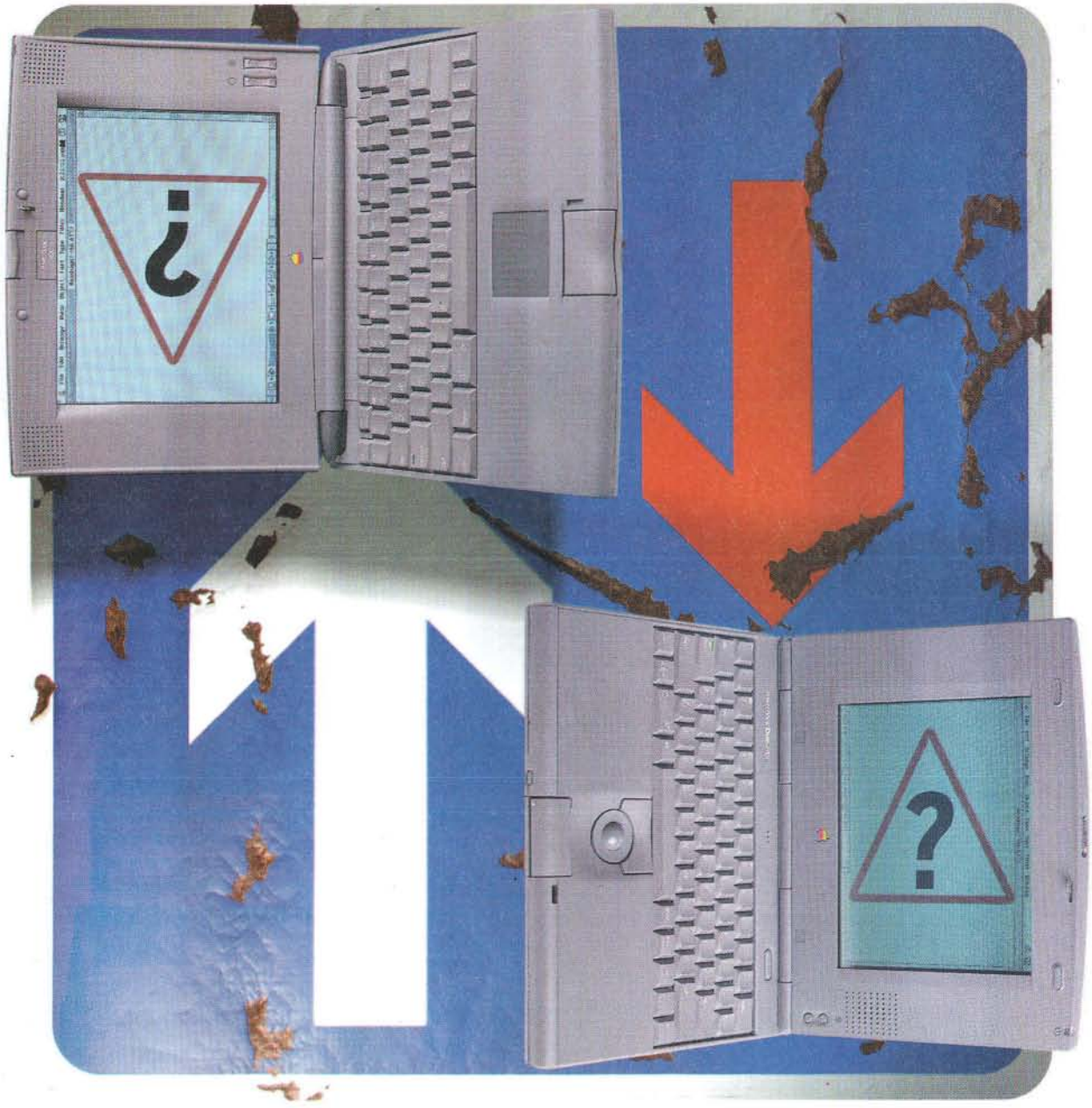

How to choose between a Duo and a PowerBook.

By Wendy Sharp

Fast Lane

What's the best portable?

Back in October 1992, Apple introduced the PowerBook Duos as a comprehensive solution in portable computing. The minimalist Duos didn't have floppy drives, SCSI ports or video output, but they weighed only four pounds. And because they let you add and remove features through the judicious use of docking stations, Duos were the most flexible Macintosh notebooks. A Duo could be either a lightweight Mac with which to travel or (when you plugged it into a docking station) a fully functional, fully connected Mac on your desk. Then in May 1994, Apple introduced the PowerBook 500 series. These all-in-one notebooks have ethernet ports, internal hard drives as large as 1GB, PCMCIA card support, an innovative new input device and much more. In fact, for the first time, it's possible to buy a PowerBook with all the features of a desktop Mac – or a dock-equipped Duo. Why, then, would anyone still choose a Duo?

The answer is the same as it was before the PowerBook 500s were introduced: Duos are a great choice for their flexibility and their light weight. But are they the right choice for you? Apple currently sells seven PowerBooks: the 150, 520, 520c, 540, 540c, and the Duos 280 and 280c. (If you're unfamiliar with Apple's nomenclature, the two things to remember are that "c" means colour and that the higher the number, the more high-powered the CPU. The 540 and 280 will be discontinued by the end of 1994.)

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ILLUSTRATION: PETER CROWTHER
Created in Adobe Photoshop 3.0 using a Quadra 900 with 150MB RAM and a YARC board.

If you're looking for a budget option and insist on a new computer, your only choice is the PowerBook 150, although you'll probably find it lacking and wish you had waited to save more money (see Reviews, *Macworld*, December 1994). If money isn't your first priority, either a PowerBook 500-series or a Duo makes more sense. Which one, though, depends on how you intend to use it.

PowerBook Duo 280c

The one and only?

If you're trying to decide whether a PowerBook (any PowerBook) can be your sole computer, my answer is simple. No. At least, not without peripherals.

For sustained use, a keyboard and monitor whose bottoms are at the same height are bad news. Looking down at a screen for hours can give you backaches; raising a keyboard to just above eye level can damage your wrists and forearms. Plus, neither the displays nor the input devices of PowerBooks or Duos are ideal for long-term work.

Although the display quality of a PowerBook 540 is slightly preferable to that of the Duos, none of the screens are comfortable to look at for eight hours a day. The active matrix screens of the PowerBook 540s approach the quality of standard monitors, but the screens are small: 9.5 inches on the diagonal. This compares with 9 inches for the greyscale Duo 280 and 8.4 inches for the colour Duo 280c. (On most 14-inch monitors the portion of the screen that actually displays an image measures between 11 and 13 inches diagonally.)

The PowerBook 520-series' passive matrix screens are inappropriate for daily, full-time use – that's no surprise. But even the active matrix screens used in the Duos and PowerBook 540 series are inappropriate, despite being superior to passive matrix screens.

The input-device situation is just as problematic. A Duo's keyboard is 88 per cent the size of a standard keyboard. Using it forces your hands into a slightly cramped position, with your arms squeezed against your sides. That's fine for a few hours a day, but if you try to use the Duo for full-time computer work, you're asking for trouble. The PowerBook 500s have full-size keyboards that are more comfortable.

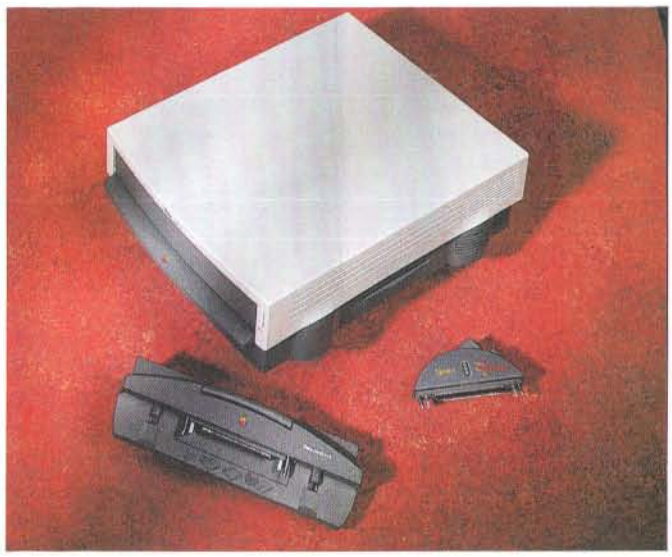
However, neither the PowerBooks' trackpad nor the Duos' trackball would be my choice for full-time work. No mistake: the trackpad (a touch-sensitive, black square that uses capacitance to respond to the movements of your finger) is extremely cool. Although it's fun to use (I think fingerpainting in kindergarten was the last time I tried drawing directly with my fingers), my hand feels strained fairly quickly. Positioning my index finger and thumb for drawing and clicking means awkwardly tucking up my other fingers and arching my hand – an unnatural and uncomfortable position. The Duo's trackball is easier for me to use – it has two buttons (the trackpad has only one), so clicking is simpler. Still, it's quite small, and although I don't mind its size, I've heard strong complaints from others. Both of these input devices are perfectly acceptable

continues page 77

Docking options

It's impossible to talk about Duos without talking about docks. Docks give Duos power and flexibility. Connecting a Duo to a dock adds features that range from the simplicity of a floppy drive to the complexity of NuBus cards and ethernet.

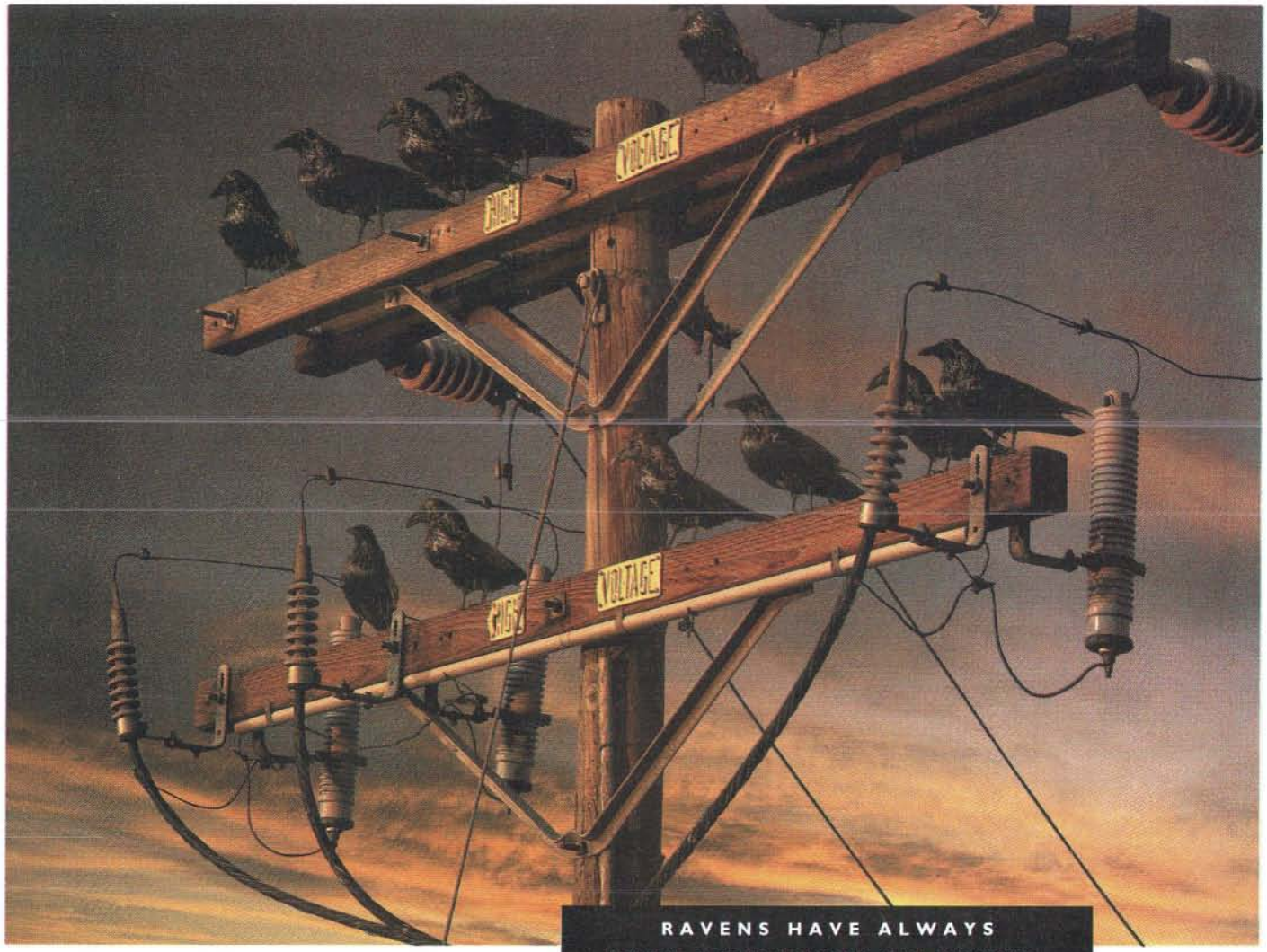
There are three styles of docks. The smallest weigh about 5 ounces and include one main port, such as a floppy-drive port or an ethernet connector, as well as an ADB port. Available small docks include the PowerBook Duo Floppy Adapter (£80, but the floppy drive is another £90); Asanté Technologies' NetDock (£199; Ingram, 0908 260160) with an ethernet port; the Focus Enhancements SCSI Dock ($139.99, 0101 617 938 8088); and Newer Technology's MicroDock series, which includes the Colour MicroDock (£200), Ethernet MicroDock (£149) and SCSI MicroDock (£110). These tiny docks are great if you need to add a single feature to a Duo.



A dock sampler
Apple's Duo Dock II (top), Apple's PowerBook Duo MiniDock (bottom left), and Newer Technology's SCSI MicroDock.

The midrange docks include Apple's PowerBook Duo MiniDock (£270), Radius's EtherD and Powerlink Presentor (£1,695; Frontline, 0256 463344), and RasterOps' DuoMate 8 (£445, 0256 59283) and DuoMate 16sc (£645). (The Radius docks are the former E-Machines line that Radius inherited when it bought SuperMac Technology in the autumn.) Unlike the smaller docks, midrange docks come in all shapes and sizes. All offer an ADB port, a floppy drive port, sound output and video output of varying levels. The MiniDock, the EtherDock, and the DuoMate 16sc also include SCSI ports, and both the MiniDock and the EtherDock offer sound input as well as output. Finally, the EtherDock includes an ethernet connector.

The last dock, Apple's Duo Dock, is more or less one of a kind – more or less because Apple is now shipping both the second and third versions of the same product. (The original PowerBook Duo Dock was revised to fit the colour Duos but the name wasn't changed.) The PowerBook Duo Dock (£560) and the PowerBook Duo Dock II (£735) are both variations on a theme – a desktop docking station that's just about as big as a Quadra 650 and that includes all the features of a desktop computer, such as a built-in floppy drive, optional hard drive, two NuBus slots, and all the standard ports (although only the Duo Dock II includes an ethernet port). While the smaller docks connect to the back of a Duo, the desktop docks swallow it, like a tape in a VCR, so a monitor and keyboard are necessary extras.



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The solution, of course, is adding peripherals: a normal keyboard, a mouse and a full-size monitor attached to your PowerBook or Duo make it as comfortable as any desktop computer. But how easy is it to attach those peripherals?

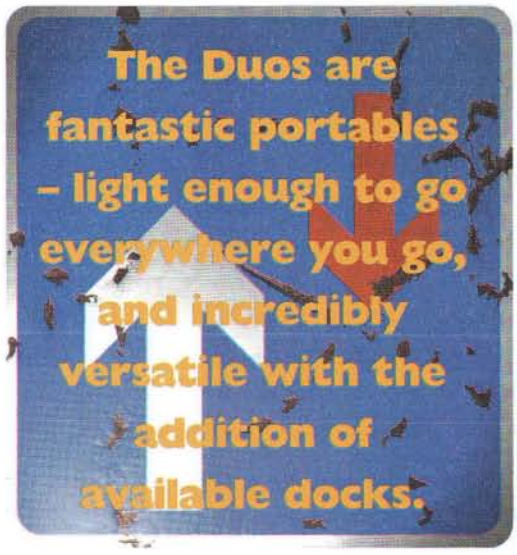
The Desktop Portable

A PowerBook 500-series Mac comes with all the connectivity options you've ever dreamed of. All of the 500-series PowerBooks have ports for ethernet, ADB, SCSI, sound input and output, and video output, supporting external monitors up to 16 inches in 256-colour mode (8-bit colour depth). All 500s also have two battery bays, one of which doubles as a PDS slot. This slot can hold a battery, a PDS card or a PCMCIA Expansion Module from Apple (£110, 081 569 1199). This PCMCIA adaptor holds two Type II PCMCIA cards (typically used for wireless modems and other connection peripherals) or one Type III card (typically used for hard drives).

A Duo, on the other hand, has only a printer/modem port, a telephone-line connector for an internal modem and a docking connector. This might sound terrifyingly limited – but with the right dock, a Duo can do anything a PowerBook can do.

To use a PowerBook 500 as a desktop computer, all you need to do is plug in a keyboard, a mouse, the monitor (via a video adaptor that comes with the PowerBook), and the monitor cable; then change the settings in the Monitors control panel and you're ready to go. If you need to use an external hard drive or CD player, add an HDI-30 SCSI cable; if networking, add an ethernet transceiver and cable. Easy enough, right? You can accomplish the same thing with a Duo by using Apple's £950 PowerBook Duo Dock II. And since everything is connected (and stays connected) to the Duo Dock, all you have to do is slide the Duo into the dock.

Unfortunately, the Duo Dock II is not portable. At 16 pounds and about the size of a Quadra 650, a Duo Dock II is acceptable only if you need all your connectivity options in one place. If you need all the features of a desktop Mac at work plus connectivity options when you travel, a Duo plus a Duo Dock II won't serve your purpose. That doesn't mean you should forgo the Duo, but it does mean you should look at a different kind of dock (see the sidebar "Docking options").



Once you've added peripherals, both the PowerBooks and the Duos are perfectly acceptable sole computers, although they don't compare with the best (or even superior midrange) desktop Mac systems. Their processors are 68LC040s, ranging from the 25MHz version for the 520s to the 33MHz version for the Duos and 540s. This processor doesn't have an FPU (a maths coprocessor), so while the 500-series machines are generally faster than older PowerBooks, this is not the case for maths-intensive tasks, such as rendering. And Macworld Lab tests showed that even a Quadra 650 handily outraced all the PowerBooks and Duos (see Reviews, October 1994).

What PowerBooks Really Cost

This chart shows prices for the PowerBook 540s and their equivalent Duos: the Duo 280 that includes a floppy adaptor and floppy drive; Apple's MiniDock; and Apple's Duo Dock II. Use of the Duo Dock II requires an additional monitor and keyboard, but as achieving similar functionality with a PowerBook 540 would also require a monitor and keyboard, the chart leaves out these costs since they're the same.

Prices listed are for minimum 4MB configurations: to add another 8MB of memory and a modem, according to Apple, would cost an additional £600 for the 280, £550 for the 280c, £600 for the 540 and £700 for the 540c.

Grayscale Portables*

PowerBook 540 with 240MB hard disk	£2,200
Duo 280 with 200MB hard disk	£1,900
Duo 280 with floppy drive	£2,075
Duo 280 with Apple MiniDock	£2,170
Duo 280 with Apple Duo Dock II	£2,635

Colour Portables

PowerBook 540c with 320MB hard disk	£3,400
Duo 280c with 320MB hard disk	£2,600
Duo 280c with floppy drive	£2,775
Duo 280c with Apple MiniDock	£2,870
Duo 280c with Apple Duo Dock II	£3,375

* Will be discontinued by end of 1994.

The two-Mac solution

Instead of adding peripherals, another solution is to have both a desktop machine and a portable. A Quadra 630, Apple's newest inexpensive desktop system, is substantially faster than any current PowerBook options. And sharing information between a desktop and a portable is easy to do: you can connect a PowerBook to another Mac using Apple's £35 HDI-30 SCSI System Cable, while the easiest way to connect a Duo to another computer is to create a LocalTalk network using two PhoneNet connectors. Though LocalTalk is far from the fastest networking option, on a mini network of two computers, it's fast enough.

If you choose a separate desktop Mac, a Duo (with its roles as a docked desktop Mac and a subnotebook) seems to lose its purpose. After all, if it won't be your desktop machine, why buy it?

On the road

The obvious reason to buy any portable computer is mobility: even if you don't travel regularly, there are advantages to being able to work anywhere. But to accomplish that, you certainly need a lightweight computer – one that you're comfortable carrying for extended periods of time. Another consideration is that the computer's batteries must be powerful enough to let you get some work done.

continues page 78

Both the Duos and the 500-series PowerBooks use high-capacity NiMH (nickel-metal-hydride) batteries (although they're different types). It's reasonable to expect about three hours of use per battery. The big difference is that the PowerBook 500s have two battery bays, and if you choose to use both for batteries, you'll get twice the battery life of a Duo. (The obvious caveat is that you can use two batteries with a Duo, too – just not at the same time.) Of course, this capability doesn't come free. The battery's price is only £89; its weight is the heavier cost.

An extra battery adds 0.8 pounds to a PowerBook's weight. A fully loaded PowerBook 540c (with two batteries and an internal PowerPort Mercury modem from Global Village Communications) weighs 7.35 lb. No problem, right? But add the mains adaptor (an item you'll probably always want to carry with you) and a carrying case, and the weight goes up to a seriously unpleasant 10.35 lb. As far as I'm concerned, that's simply too heavy – with or without that extra battery.

The Duo 280c, with one battery and an internal modem, weighs 5.05 lb. When you add an AC adaptor and a carrying case, that goes up to 7.75 lb. (The difference is that the Duo's AC adaptor isn't as heavy as the PowerBook 540's: according to Apple, the PowerBook 500 requires a larger power supply to support dual batteries.) Of course, every dock and cable adds weight. But if your needs are simple, the weight of a Duo stays well under that of a PowerBook 540c.

PowerBook 540c

The average weight of docks varies greatly, but those that you would travel with (any but the Apple Duo Dock or Duo Dock II) range from 0.25 lb to 1.25 lb. The simpler your needs, the lighter the dock. If, for example, you want to use a colour monitor, keyboard and mouse while travelling (but don't need to attach a SCSI device or connect to an Ethernet network), Newer Technology's Colour MicroDock (£200; Ingram, 0908 260160) can fill the need for 0.34 lb.

Even if your needs aren't simple, leaving a dock behind when you don't need it is a Duo's big advantage. If you're off on a business trip where you'll make a major presentation, you bring a dock; on the other hand, if it's a gorgeous day and you want to work in the park down the street, you can leave your dock at home. And although one of the common complaints about Duos is that remembering to take all the necessary external pieces with you is too much work, to some extent forgetting externals is the occupational hazard of any notebook owner. Don't forget: all of a PowerBook's great connectors are meaningless without the right cables.

Singular options

The new PowerBooks do have two features that no dock currently provides for Duos: a PDS slot and a PCMCIA option. At the moment, these features shouldn't be critical elements in your buying decision. First, no PDS cards for the PowerBook 500 series are shipping. And I don't expect companies to offer PDS cards, for two reasons. First, many PowerBook 500-series owners will want to use the PDS slot for either a second battery or for Apple's PCMCIA Expansion Module for PCMCIA support. Second, Apple's future PowerBooks are likely to switch to the PCI (Peripheral Component Interconnect) bus, making PowerBook PDS cards quickly irrelevant.

What about PCMCIA? The most common PCMCIA cards in the PC market are modem cards and network cards – both options that are already available for Duos without PCMCIA. Wireless networking cards will also be available for use with the PCMCIA adaptor. For example, as we went to press, Dayna Communications planned to ship the DaynaComm Roamer PCMCIA Cordless Network Adaptor ($699, 801/269-7200) in November. In October, though, Dayna shipped the DaynaComm Roamer Serial Roamer (also $699) for use with a Duo.

Other suggested uses of PCMCIA include added storage, or personalised storage on a corporate loan machine. Certainly the personalised storage sounds convenient – but at the moment, it's a lot more expensive than other options. For the same price as a PCMCIA adaptor and ten 130MB hard drive cards, you could buy a portable magneto-optical drive, ten 128MB cartridges – and a Duo 280c!

Although at first glance PCMCIA looks intriguing, for the time being the PCMCIA adaptor doesn't give the PowerBook 500 a considerable advantage over the Duos.

Beyond the list price

Price isn't an advantage for the PowerBook 500, either, although it's difficult to compare prices between Duos and PowerBooks because of the numerous hidden costs. For example, a Duo 280 plus two PhoneNet connectors (about £12 each) is, at £1,925, the least expensive, usable option; but it requires a second Mac – a cost ranging from about £50 for a used SE to about £1,800 for a new Power Mac 6100 system. On the PowerBook side, video-out ports are useful only if you have a monitor to connect to, and Ethernet requires a transceiver, a cable, and a network.

Because the Duo 280s and the PowerBook 540s use the same 33MHz 68LC040 processor and active matrix screens, it makes the most sense to compare their prices. Duos are less expensive – until you start adding docks (see the chart, "What PowerBooks really cost"). If you have a clear idea of how you'll use your portable computer, a Duo is probably cheaper because you can pay for only the options you'll need. But if you think you'll need absolutely everything, a PowerBook 540 may be less expensive in the long run.

The last word

The PowerBook 500-series Macs are appealing computers, elegantly high-tech and feature-rich. But I would never buy one. They're not a satisfying replacement for a desktop computer, and as far as I'm concerned, they're too heavy to be a great portable. The Duos, on the other hand, are fantastic portables. They're light enough to go everywhere you go, and incredibly versatile with the addition of available docks.

Someday Apple will develop the perfect notebook computer – light as a spiral-bound paper notebook, compatible with any network and connectible to anything from your car to your home-security system. Meanwhile, I'll stick with a Duo. **MW**

Wendy Sharp, a *Macworld* associate reviews editor, is the happy owner of a Duo 230.

Frankfurt, October 5–7, 1995

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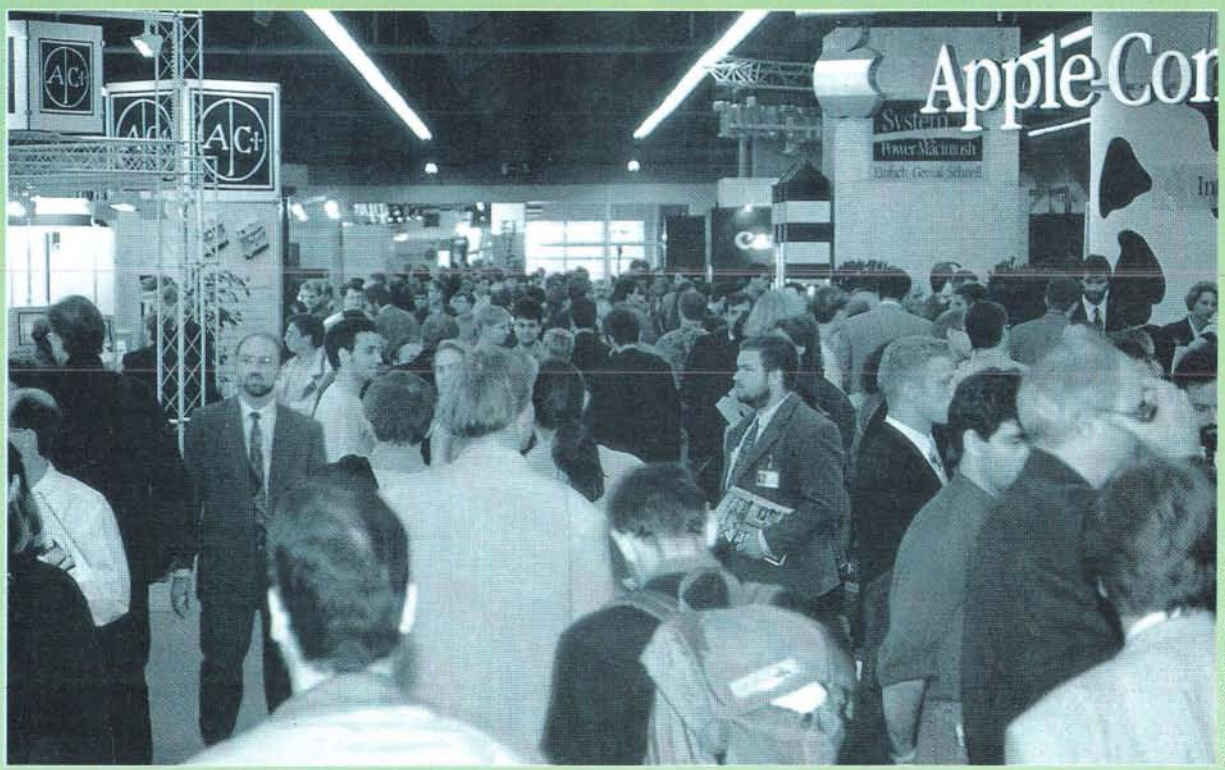

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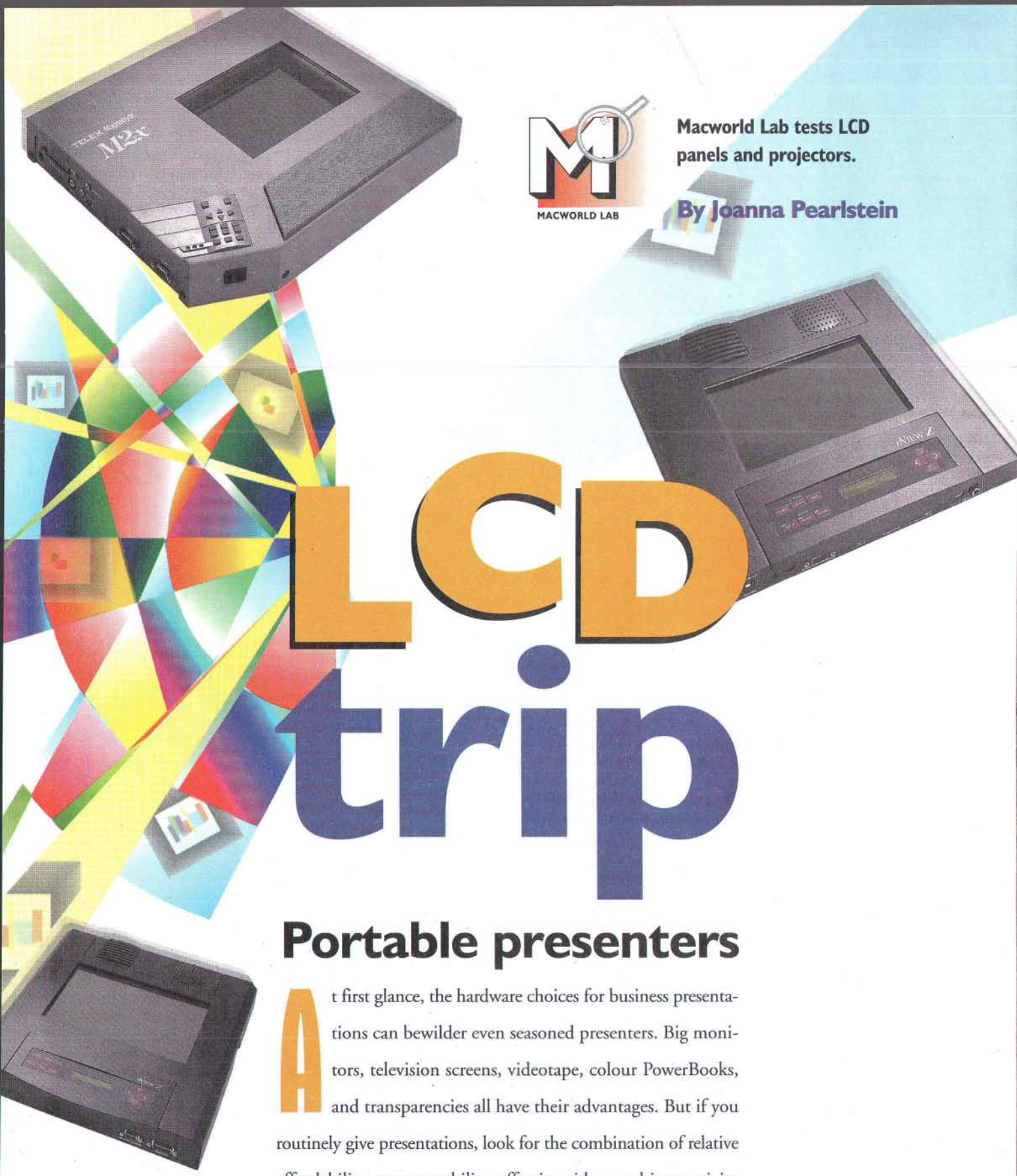


MACWORLD LAB

Macworld Lab tests LCD panels and projectors.

By Joanna Pearlstein

LCD trip

Portable presenters

At first glance, the hardware choices for business presentations can bewilder even seasoned presenters. Big monitors, television screens, videotape, colour PowerBooks, and transparencies all have their advantages. But if you routinely give presentations, look for the combination of relative affordability, easy portability, effective video, and interactivity with live presentation data offered by only one technology: LCD panels and projectors.

continues page 82

ILLUSTRATION: MANDIE JOHNSON
Created in Adobe Photoshop 2.5 using a PowerPc 7100 72/400. Photography Eric Elmer

MACWORLD LAB

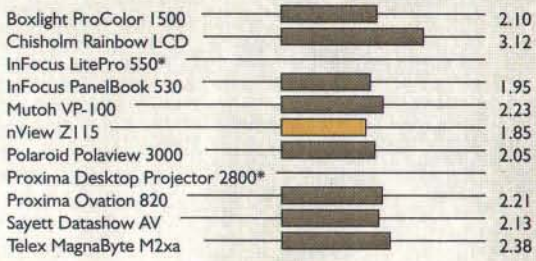
MW LAB Why Brighter May Not Mean Better

Although they appear clear, LCD panels block most – but not all – of the light from a projector. The more light they let through, the higher their *transmissivity*. Higher transmissivity yields brighter, though not always more appealing, images. In our tests, the brightest products appeared washed-out and fuzzy. Some panels with lower transmissivity scores had more saturated colours and sharper images.

Percentage of Light Transmitted

Editors' Choice

Longer bars denote the ability to project brighter images. Products are listed in alphabetical order.



**Has built-in projector, so could not be measured.*

BEHIND OUR TESTS

Macworld tested each panel's transmissivity, or the amount of light it lets through. Using a Dukane overhead projector as a constant light source and a Minolta T1 illuminance meter, we measured the amount of light (in lumens) each panel transmits and divided it by the projector's lumen output. The resulting percentage indicates panel brightness. We could not determine the transmissivity of projectors because we had no constant with which to compare the lumens output. In principle, you want a bright display; but brightness is only one measure of a panel's quality, and higher transmissivity may not mean a better display. In this case, the Editors' Choice product (the nView Z115) had the lowest transmissivity, though it was only 1.27 percent lower than the brightest panel. The nView product's superior performance was related to factors that cannot be measured quantitatively, such as colour adjustments by a user to enhance apparent brightness. Remember that these devices are used in dark rooms, so the eye will adjust to their display quality. Usually, the longer you look at a display, the better it appears. **– Macworld Lab testing supervised by Matt Clark**

And with dozens of panels and projectors on the market, the pickings are plentiful.

An LCD panel is about the size of a PowerBook: you connect the panel to a Mac's video port, then place the panel on an overhead projector (OHP). An LCD projector combines a panel and a built-in light source, and is thus much larger than an LCD panel. Both types of products generally feature good image quality and fairly bright colours.

Projector Options
InFocus Systems' LitePro 550 (left) and the Proxima Desktop Video Projector 2800

Macworld Lab tested 11 active matrix, video-capable (in nearly all cases, supporting PAL, NTSC, and SECAM input standards) LCD panels and projectors that cost between £1,535 and £8,495. Most products tested have a resolution of 640 by 480 and support up to millions of colours. Many also include sound and microphone inputs, so users can project sound from built-in speakers.

To ensure consistency in viewing conditions, we tested only products with an 8.3-inch-to-9.4-inch screen; these produce images measuring 6 to 10 feet diagonally, and work well in a medium-size conference room (they aren't bright enough for large-group presentations). Sharp Electronics also sell panels that have 10.4-inch screens, which can display larger images for audiences up to about 200 people, for about £500 to £2,000 more than their smaller siblings.

Panels versus projectors

Once you've narrowed down your hardware selection to an LCD product, the choice between a projector and a panel (which weighs much less but requires an OHP) depends on your company's needs and available equipment.

Conventional OHPs are reflective (that is, the light shines from above and bounces off a reflective base) while LCD panels require a transmissive OHP, in which light comes from the bottom and shines through the LCD to illuminate the image. If your company already has transmissive OHPs in stock, you should probably save money and get an LCD panel.

Most LCD-panel manufacturers recommend OHPs that transmit a minimum of 3,000 lumens (a measurement of light emission), though you'll need as much as 7,000 lumens in a room with lots of ambient light. Be careful, though: such bright OHPs may damage the

panel. Contact the manufacturer to find out what brightness level a particular device can handle. By the same token, avoid OHPs with incandescent bulbs – these can fry a panel. Metal-halide bulbs are best. Projectors tend to be brighter – one factor that contributes to a sharp and vivid projected image (see "Why brighter may not mean better").

Also consider how much you will move equipment around. Panels tend to weigh less than projectors, but you may need to bring an OHP for a panel – not to mention a computer, back-up disks, PowerBook adaptor and laser disc player. The combined weight of an LCD panel and an OHP can exceed that of an LCD projector (the units we tested top out at about 25 pounds) by a wide margin (see "A quick look at LCD panels and projectors"). And beware of advertised weight estimates, as some do not include necessary accessories. Most vendors sell carrying cases; quality varies, so be sure to check this before you buy.

Hard to quantify performance

We evaluated products based on brightness, the aesthetic quality of displayed images (as judged by a group of *Macworld* editors and designers), the ease of set-up and use, relative portability, price and technical support.

LCD panels and projectors are hard to evaluate quantitatively because measured lab results don't always directly indicate quality. And subjective appraisal relies on personal taste, which is by no means consistent. (We picked a clear winner – but to meet your own tastes and needs, preview an LCD projector or panel before buying, if possible using your own presentation images. If you regularly display a company logo or information graphic, you may want to know just what it will look like when displayed.)

Macworld Lab measured the panels' light output to determine their brightness. The lab calculated transmissivity (the amount of light that passes through a panel) by dividing the panel's lumens output by the OHP's lumens output. (We didn't have a constant for the LCD projectors, so we could not measure their transmissivity.) The overall difference between the brightest and dimmest panels was just over 1 per cent of total light transmitted – not terribly significant.

Plus, the amount of light a device transmits does not necessarily translate into display quality. Our tests showed that Chisholm's Rainbow LCD panel transmitted the most light (ostensibly the best results) but our judges did not rate it well consistently. The Chisholm's display looked washed out, fuzzy and too bright. Likewise, our judges rated nView's Z115 and InFocus Systems' PanelBook 530 highly, but those panels posted the lowest transmissivity scores.

The two LCD projectors we evaluated, the InFocus LitePro 550 and the Proxima Desktop Video Projector 2800, output more light than the panels. This suggests that a common claim by projector manufacturers (that their products are brighter than LCD panels because they customize the light source to the panel) may have some validity.

Lumens output also varies depending on where you measure brightness in the image. Our OHP was generally brightest in the vertical and horizontal centres of the display; the dimmest area was the upper right-hand corner, followed by the upper left-hand corner. This made all the LCD panels' images fade at the top. To counteract this effect, you should not place light-colour or low-contrast images at the very top of the screen.

Display aesthetics

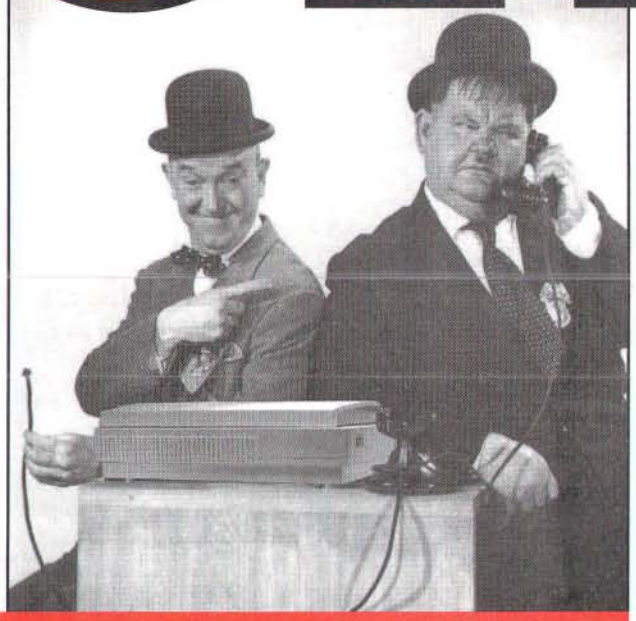
Our judges evaluated products based on the appearance of colours, flesh tones, text, full-motion video, and a typical presentation-slide image. For comparison, we displayed the same images on an Apple 13-inch monitor and, for video, on a television screen.

Our judges liked the nView Z115 panel the best, followed by the InFocus PanelBook 530, saying that both products had crisp images with bright, vibrant colours. The judges were divided on the Polaroid Polaview 3000 panel: some rated it the best, calling its display vibrant, clean and sharp; and some rated it the worst, saying it was faded and blurry and had jumpy, banded video.

Aside from differences in personal taste, this inconsistency may be partially due to the type of images used (some units do well with text, while colours appear relatively lifeless), the position of the controls or the darkness of the room in which images were displayed. (We displayed static images in a large conference room with a small amount of ambient light; we displayed the videos in a small room with practically no ambient light.)

Our judges did agree on the mediocre image quality of some products. Mutoh America's VP-100 displayed washed-out images and had some

GET



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ghosting (the appearance of a faint second image behind a primary image), while Telex Communications' MagnaByte M2xa produced dull, faded, and soft-edged images. Boxlight's ProColor 1500 is a modified version of the Telex product, and while the MagnaByte M2xa transmitted more light than the Boxlight, our judges liked the Boxlight better. Sayett Technology's Datashow AV had accurate colours, but images looked washed out and grainy.

The Proxima Desktop Video Projector 2800 had insufficient colour contrast and suffered from a noticeable shift in brightness from top to bottom. We found that the Proxima products required a lot of adjustment to produce adequate results, and in some cases we had trouble getting rid of a green cast on the images. Video on the Desktop Video Projector 2800 appeared jumpy and slightly blurry. InFocus's LitePro 550 looked washed out and had noticeable banding and flicker in our testing. The LitePro 550 also got very hot while in use; remember to let it cool before transporting it.

While most panels support 24-bit colour, bear in mind that a panel or projector can display only as many colours as your processor can handle, so without a video card installed in the Mac, you're limited to 8- or 16-bit colour. And a larger colour palette doesn't necessarily mean a better picture: the two products whose projected images we liked best, the Z115 and the PanelBook 530, have a smaller colour palette than other LCDs. The PowerBook 540c, Duo 270c, and Duo 280c can produce 16-bit colour at 640 by 400 resolution. If you're planning to run your presentation from one of these PowerBooks at the higher resolution, adjust your presentation file to account for the fact that the bottom of the image will be cut off.

Ease of use

You can often improve display quality by adjusting brightness, contrast, and tint on LCD panels and projectors. Most products feature both controls on the device itself and remote controls that let the user change display qualities, image orientation, and media source. Most remote controls are easy to use and understand, with the exception of the InFocus unit's – several of its menus were hard to navigate and exit, and in one case we had to call technical support to make the product work. (Before you buy any of these devices, try adjusting the controls.)

When using an LCD panel with an OHP, make sure the room is well ventilated. If you're presenting in a hot room, your OHP may spontaneously shut down at the worst possible moment

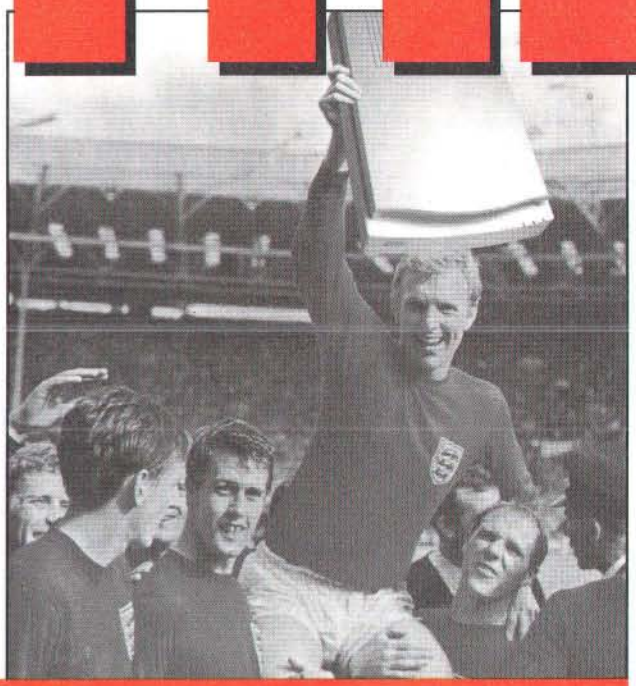
There are few controls on the Polaroid product; if you lose the remote, you lose the ability to adjust display, video source, and image characteristics. At the opposite extreme, nView's credit card-size remote only lets you move within a presentation file and adjust speaker volume. Its large buttons make it easy to operate in the dark, however.

Many products also contain stereo speakers, but don't be fooled: if sound is an integral part of your presentation, bring portable speakers and connect them directly to your Mac. Sound inputs on the Boxlight and Telex products were difficult to use; because the sound-input port is poorly constructed, the cables kept falling out of the sockets, leading to radically reduced sound volume or total silence. We had to hold the cables in manually to make the sound audible, although when we could hear the sound, quality was good.

Besides including remote controls and stereo speakers, some vendors offer devices to help users control or modify their presentations. Chisholm's Rainbow LCD panel includes a drawing tablet that lets you write on the displayed image. Proxima sells a wand called the Cyclops (£425/£475 for projector and panel respectively), a 3-foot-long pointing device that serves as a

continues page 86

THE



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A QUICK LOOK AT LCD PANELS AND PROJECTORS

Company	Product	Price	Projector or Panel	Tested by Macworld Lab	Video Support (NTSC/PAL/SECAM)	Mac Adaptor	Maximum Colours Supported
Apollo	Vision 262K LCD Panel	£3490	panel	No	Yes B/No/No	built-in	262,144
	Vision Q2 LCD Panel	£4290	panel	No	Yes/Yes/Yes	built-in	16.7 million
	Vision Q3 LCD Panel	£4890	panel	No	Yes/Yes/Yes	built-in	16.7 million
Boxlight	ProColor 1300	$2999	panel	No	No	included	624,000
	ProColor 1500	$3799	panel	Yes	Yes/Yes/Yes	included	16.7 million
	ProColor 2100	$6599	projector	No	Yes/Yes/Yes	included	16.7 million
Chisholm	Rainbow LCD	£4800-£5250	panel	Yes	Yes/Yes/Yes	included	16.7 million
Dukane	MagniView 850§	£5995	projector	No	Yes B/Yes B/Yes B	included	2 million
InFocus Systems	LitePro 540	£6995	projector	No	Yes B/Yes B/Yes B	included	1.4 million
	LitePro 550	£8495	projector	Yes	Yes/Yes/Yes	included	1.4 million
	PanelBook 525	£4295	panel	No	Yes B/Yes B/Yes B	included	1.4 million
	PanelBook 530	£4795	panel	Yes	Yes/Yes/Yes	included	1.4 million
	PanelBook 550	£5295	panel	No	Yes/Yes/Yes	included	1.4 million
Mutoh America	VP-100	£4290	panel	Yes	Yes B/Yes B/Yes B	included	185,195
nView	Z110	£4250	panel	No	No/No/No	built-in	1.4 million
	Z115	£4695	panel	Yes	Yes/Yes/Yes	included	1.4 million
	Z210	£5495	panel	No	No/No/No	built-in	16.7 million
	Z215	£5995	panel	No	Yes/Yes/Yes	built-in	16.7 million
Panelight Display Sys	ZX	$3695 C	panel	No	Yes/Yes/Yes	built-in	1.4 million
Polaroid	Polaview 3000	£5250	panel	Yes	Yes/Yes/Yes	included	16.7 million
Proxima	Desktop Video Projector 2800	£6995	projector	Yes	Yes/Yes/Yes	included	2 million
	Ovation 820	£4500	panel	Yes	Yes/Yes/Yes	included	2 million
	Ovation 822	£5550	panel	No	Yes/Yes/Yes	included	2 million
	Ovation+ 840	£4150	panel	No	No	included	16.7 million
	Ovation+ 842	£4750	panel	No	Yes/Yes/Yes	included	16.7 million
	Ovation+ 846	£5250	panel	No	Yes/Yes/Yes	included	16.7 million
Sayett Technology	Datashow AV ASK 16.7	£4995	panel	Yes	Yes/Yes/Yes	included	16.7 million
Sharp Electronics	QA-1100§	£5495	panel	No	Yes B/Yes B/Yes B	included	16.7 million
	QA-1500§		panel	No	Yes/Yes/Yes	included	1.7 million
	QA-1650	£6995	panel	No	Yes/Yes/Yes	included	16 million
	XG-3800E	£8495	projector	No			
	XV-730H	£3795	projector	No			
	XV-701P	£1535	projector	No			
Telex Communications	MagnaByte M2xa	£4995	panel	Yes	Yes/Yes/No	included	614,000
3M	6450	£4795	panel	No	Yes/Yes/Yes	included	16.7 million

NA = not applicable. A Combined weight of products, cases and necessary accessories. B With extra-cost video adaptor. C For video-capable unit; data-only unit costs $2995. § Now superseded

remote mouse, and a smaller device, the Laser Pointer (£247), which serves the same function.

InFocus sells a LiteShow option for £1,000 for the LitePro series that lets users make computerless presentations. You print your slide show to a LiteShow printer driver, place the file on a DOS-formatted disk and place the disk into the disk drive on the LiteShow-enabled panel or projector. This is a nice option, but Macintosh users may not like the DOS-formatting requirement and may be more comfortable with the control that running a presentation from a computer provides.

Sharp Electronics' QA-1500 panel lets you store presentations on Type III PCMCIA cards. This will be appealing when Macintosh drivers for PCMCIA cards emerge over the next few months.

Set-up advice

You can often get around relying on technical support by avoiding common pitfalls. When using an LCD panel with an OHP, make sure the room is well ventilated. In our tests, the OHP kept shutting off because it overheated. If you're presenting in a hot room, your OHP may spontaneously shut down at the worst possible moment. Heat causes another problem – an OHP or LCD projector's cooling fan can be noisy, so be prepared to speak loudly, use a microphone or increase the volume in your presentation file.

To get your presentation to appear both on your PowerBook screen and on your LCD, you must turn on video mirroring in the PowerBook Display control panel – and, of course, you need a PowerBook video adaptor. You may be tempted to display your images on a blank wall, particularly in rooms that are too small for the audience. Don't do it. You'll get a better picture if you project onto a beaded, rather than matte or lenticular, screen.

Alternative devices

Although we tested only active matrix panels and projectors, screens for LCD presentation panels also come in the passive matrix variety. Active matrix panels do a much better job on video. They are also brighter and display sharper images than passive matrix panels; not surprisingly, they're also much more expensive.

If you'll be presenting in a place where you can't dim the light significantly, stay away from LCD panels and projectors of any kind. Ambient light greatly affects the display quality of these products. In that case, a computer or television monitor is a better choice. Extra-large computer monitors have decent display quality, and they're a good choice for companies that frequently host presentations. These monitors are expensive, however, and definitely not portable – some weigh more than 250 pounds.

Another alternative is a scan converter, which lets you display your computer's video on a television screen. Image quality improves as price increases – from £400 up to £24,000. Unfortunately, affordable scan converters provide mediocre display quality at best. Televisions

MW EDITORS' CHOICE

In a crowded field with several strong contenders, we tested for the strongest combination of display quality and ease of use.

Z115

Elegantly designed and offering crisp display quality, the Z115 weighs less than 10 pounds.

Company: nView. **List price:** £4,695.

Screen Size	Built-in Speakers	Weight A	Contact
8.5"	No	not tested	Apollo Europe-010 32 2 387 0150
8.5"	No	not tested	
8.5"	Yes	not tested	
8.4"	No	not tested	Boxlight-0101 206 779 4479
8.4"	Yes	9.1 lb	
8.4"	Yes	not tested	
8.3"	No	12.1 lb	CRT Displays Ltd-041 427 4333
8.4"	No	not tested	GB International-0908 263 622
8.4"	Yes	not tested	Steljes-081 213 2100
9.4"	Yes	23.7 lb	
8.5"	No	not tested	
8.5"	No	9.8 lb	
9.4"	No	not tested	
8.4"	Yes	20.8 lb	Mutoh UK-0295 252 552
8.4"	Yes	not tested	nView International-0293 524 544
8.4"	Yes	9.8 lb	
10.4"	Yes	not tested	
10.4"	Yes	not tested	
8.4"	No	not tested	Panelight Display Sys-0101 415 772 5800
8.4"	Yes	14.8 lb	Polaroid-0727 859191
8.4 "	Yes	24.5 lb	Maverick-0734 886 266
8.4"	Yes	9.6 lb	
10.4"	No	not tested	
8.4"	No	not tested	
8.4"	No	not tested	
9.4"	No	not tested	
8.4"	Yes	21 lb	Matrix Displays-0932 875111
8.4"	No	not tested	Sharp Electronics-0800 262 958
8.4"	Yes	not tested	Intac Data-0709 547 177
10.4"	No	not tested	Micro P-0256 707 070
		not tested	
		not tested	
		not tested	
8.4"	Yes	10.1 lb	Gordon AV-071 387 3399
9.4"	No	not tested	3M-0344 858000

make bad computer monitors because of their low resolution; computer images tend to look fuzzy and flickery on a TV set.

The cheapest presentation solutions are good old transparencies and slides. They won't wow the audience with technical wizardry but may do the job just fine. If you make presentations infrequently or rarely, investigate transferring your presentation to video tape and displaying it on a television. This won't allow you to interact with your data, but it is certainly cheaper and simpler.

The last word

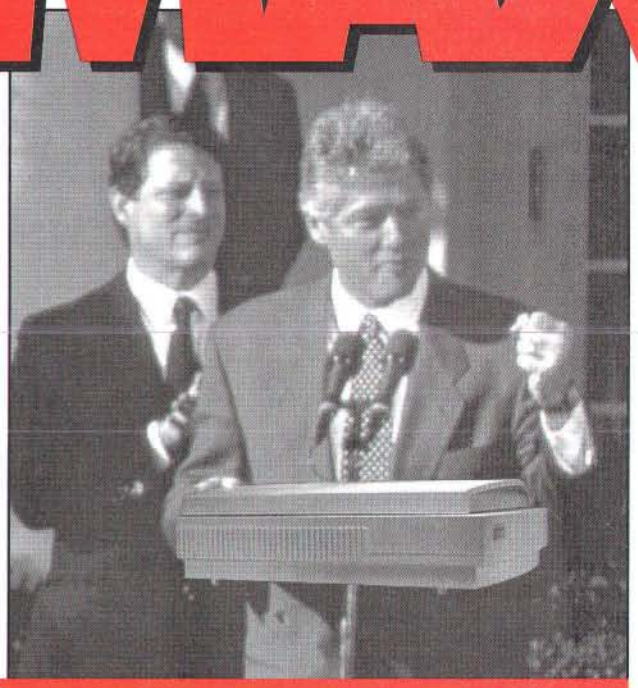
Panels and projectors are sold mainly through distributors specialising in audio-visual equipment, and you can expect the same sort of discounts from suggested retail prices on these products as on other Macintosh hardware. (Be sure to ask the company about its policy on exchanging panels with voided pixels, in case you buy a sub-standard unit.) But beware of hidden costs. Many LCD panels and projectors let you plug directly into a video source, such as a laser disc player. Others require an optional adaptor.

The base prices of products that require an adaptor tend to be lower, and these products can be a good choice if you're not sure you need video capability. In many cases, adding an adaptor pushes the price close to that of a video-capable product. If you know you need video, get the video-ready product so you don't have to carry around an adaptor. But you don't need a video-capable LCD to display QuickTime movies; the video capability doesn't affect the display quality of digitized video – the type of screen does. If all your video is digitized, save the money and get a panel without that capability – don't pay for features you won't use.

Some industry analysts predict that projectors may eventually replace panels, since their all-in-one design can be easier to use. But we were not terribly impressed with the projectors we saw, and the better units cost much more than panels of comparable quality.

Among the panels, our judges rated nView's Z115 highly. The product is also easy to set up and adjust, and at £4,695 it's reasonably priced, making it the best choice for serious business presenters. For a good economy buy, try the Boxlight ProColor 1500. This unit's visuals are less vivid and clear, but at $3,799 it's a light, versatile bargain. With either choice, you'll be on your way to a great show. **MW**

MAX



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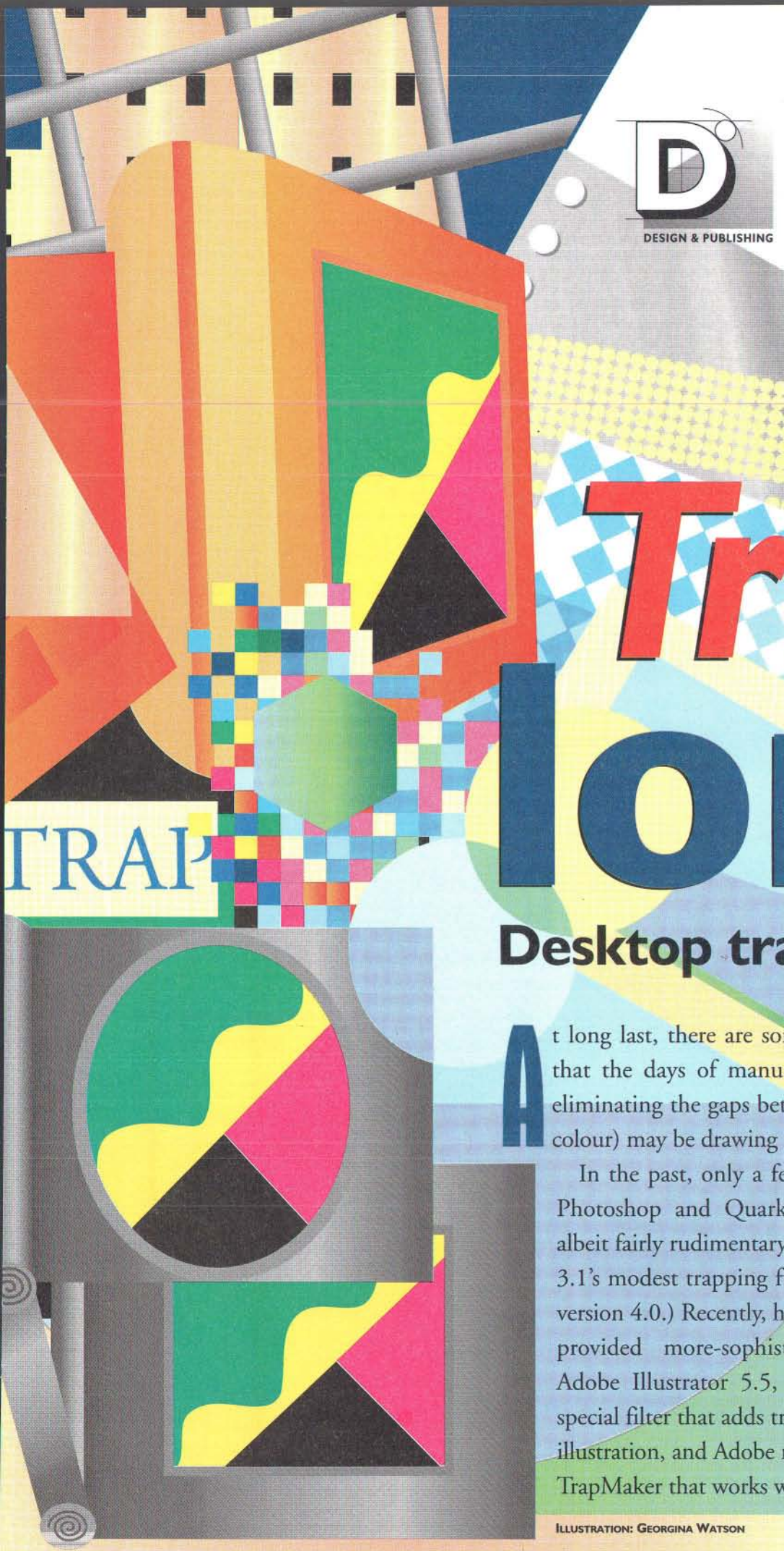


DESIGN & PUBLISHING

How well does your graphics program keep colours in line?

By Deke McClelland

Trap lore

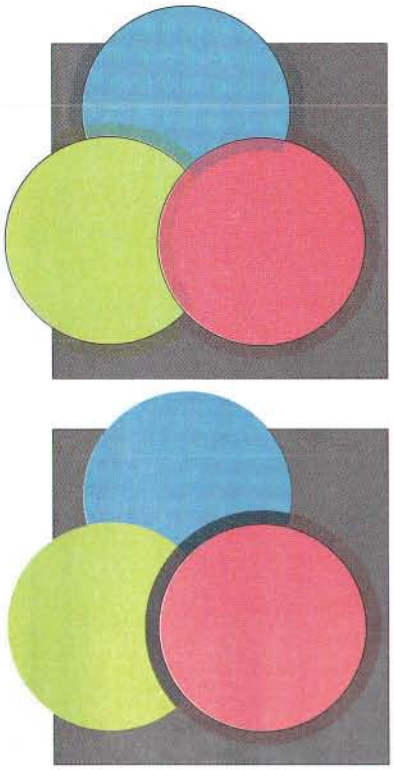
Desktop trapping tips

At long last, there are some encouraging indications that the days of manual trapping (the process of eliminating the gaps between neighbouring areas of colour) may be drawing to a close.

In the past, only a few programs such as Adobe Photoshop and QuarkXPress offered automated, albeit fairly rudimentary, trapping. (Aldus FreeHand 3.1's modest trapping functions were eliminated in version 4.0.) Recently, however, some programs have provided more-sophisticated trapping controls. Adobe Illustrator 5.5, for example, ships with a special filter that adds traps to selected paths in your illustration, and Adobe now offers an addition called TrapMaker that works with PageMaker 5.0.

ILLUSTRATION: GEORGINA WATSON

continues page 90



Selective traps
These two examples show the effects of trapping in Illustrator 5.5. In each case, the shapes with the thin black outlines were selected: shapes without outlines were not. When all shapes are selected (top), Illustrator takes each shape into consideration when creating traps. But when only the pink and grey shapes are selected (bottom), Illustrator ignores the other shapes and generates traps as if the shapes weren't there. (I thickened the traps for better visibility.)

Rasterize and Trap
After rasterizing an Illustrator file in Photoshop, I was able to trap flat fills, gradations, and images with equal success in CMYK mode. I set the Trap command to its highest Width setting to make the traps as obvious as possible.

DESIGN & PUBLISHING

Meanwhile, anyone with a generous software budget can now purchase a dedicated trapping package such as Island Graphics' IslandTrapper (£3,495) or Aldus TrapWise (£3,325).

As you may guess from their high price tags, however, both programs assume you're well versed in trapping and electronic pre-press.

A third package, Scitex Full Auto Frame (from Scitex America Corporation, 081 208 0977), appeals to an even more rarefied clientele. At £4,000, Full Auto Frame works exclusively with a £90,000 (approx) dedicated Scitex system, via a Scitex-based RIP on a Macintosh. For more on these trapping systems, see the sidebar "Trapping at the top: a guide to high-end trapping software."

For this article, I tested the automatic trapping controls in the graphics programs you use every day (namely, Adobe Illustrator, Adobe Photoshop, QuarkXPress, and PageMaker) evaluating each program's ability to handle five typical situations that require trapping. For a description and visual examples of these situations, see the diagram "Five common process-colour trapping scenarios." To begin, though, I explain what trapping is, how it works, and perhaps most important, when you should (and should not) use trapping.

Trapping zaps colour gaps

In a perfect world, trapping (the Clearasil of the pre-press industry) wouldn't be necessary. But alas, every full-colour document – regardless of how much you pay to print it – has the potential for blemishes that need to be headed off at the press.

That's because a successful print job depends not only on the equipment and the operator, but also on variables such as paper-stock quality, ink viscosity, even the relative humidity of the press area. Lots of minute errors can occur, not the least of which is press mis-registration.

When printing full-colour documents, your printer has to generate a separate plate for each process colour, spot colour and varnish that goes into the mix. These plates must be exactly aligned on the printing press, or registered. But even if the press operator can align plates in his or her sleep (as most can and probably have), the plates may shift slightly, the paper may stretch and the ink may bleed or even shrink.

If a foreground object knocks out part of a background object, that area of the background object doesn't print. But because a knockout creates abrupt changes where the objects meet, slight gaps of uninked paper appear between the objects.

Trapping is the solution. By expanding neighbouring areas of colour so they overlap slightly, you create a buffer zone. If colour A extends 0.5 points into colour B, for example, the registration can be off by as much as 0.5 points (a fairly sizable shift) without any gaps occurring. Put more simply, traps zap gaps.

Trapping won't cure massive registration problems (as exhibited in a typical page from the Sunday comics) but it will cover up the slight errors that have a habit of rankling the most obliging clients.

Traps often result in dark outlines where the colours overlap, though they're usually less noticeable than the white gaps that would occur without traps. But if two neighbouring shapes are filled with light colours (say, one with 60 per cent yellow and the other with 30 per cent cyan) the darker trap, a pale green comprising both colours, may in fact be more noticeable than a white gap. To avoid this, many programs (including Illustrator and TrapMaker) let you reduce the amount of ink coverage to create a trap that's no darker than either of the neighbouring colours. You might drop the trap down to two-thirds of its original density (40 per cent yellow and 20 per cent cyan) thereby making the trap almost imperceptible.

To create a trap, an application typically expands the edge of one object and prints it on top of the edge of the neighbouring object. This technique is also referred to as either choking or spreading. Quite simply, choking means the edge of the background expands and overprints the edge of the foreground object; spreading is when the foreground edge expands and overprints the background edge.

When not to trap

Trapping is needed only if your pages contain high-contrast edges that will be printed using substantially different inks. In other cases, trapping is not only a waste of time, but can actually hurt your document. For example, details inside continuous-tone images, including scanned photographs and most other pixel-based artwork, don't need to be trapped because there is extremely little difference between the colour of one pixel and the colours of each of its neighbours.

If you were to graph the value of each neighbouring pixel, your graph would look like a series of rolling hills. Trapping would be necessary only if the graph showed absolutely straight up-and-down cliffs. Trapping can hurt images because it softens transitions and muddies important details.

Likewise, adjacent continuous-tone images (inside a desktop publishing package such as PageMaker or Quark) almost never require trapping. Even if one image's edge is green and its neighbour's is red, the two edges likely share process colours (here, a lot of yellow and perhaps a little magenta or black). So long as one process colour remains in force from one image to the next, as it almost always does, any gap between the other inks will be covered by that colour.

The same goes for neighbouring hard-edged objects (including characters of text) that share process colours. As a rule of thumb, if two neighbouring objects share one process colour that varies by 50 per cent or less (for example, 80 per cent magenta with 25 per cent cyan next to 30 per cent magenta with 60 per cent yellow) or if the objects share two or more process colours that vary by less than 80 per cent, you don't need to trap. The continuous ink or inks will cover the gaps.

In most cases, overprinting (printing the colour from one plate over the colour from another plate) also eliminates the need for trapping. If a 100 per cent magenta object overprints onto a 100 per cent yellow background, resulting in a bright red area where the two overlap, there is no need for trapping, even though the two objects have no colours in common. Overprinting is especially popular when the foreground object contains 100 per cent black because black appears richer when background colours are mixed in.

In fact, some layout artists manage to avoid trapping entirely by designing their documents so that it isn't

continues page 93

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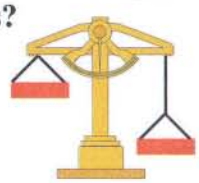

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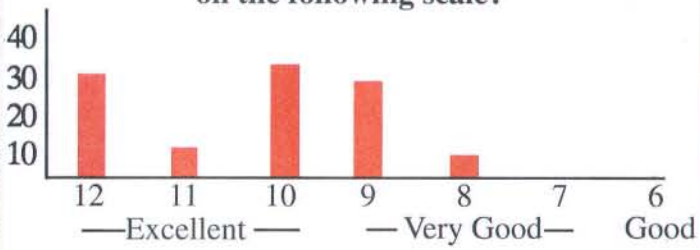

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Question #3

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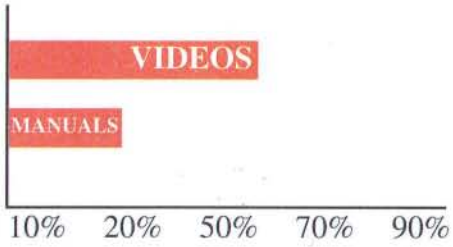

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necessary. Objects that don't overlap, images without borders, overprinting text, and shared process colours are the ingredients for a foolproof print job. But while this may seem like a lot of options, this solution offers little room to wiggle – too little to suit most designers.

Adobe Illustrator 5.5

Illustrator 5.5 (£480; Principal, 0706 832 000) offers trapping controls that aren't particularly powerful, but they are by far the best option available to a drawing program. Illustrator's Trap filter affects only those paths that are selected in an illustration, which lets you trap just the specific paths that need trapping. But Illustrator relies heavily on the expertise of the imperfect human user.

For example, the Trap filter treats a deselected path that resides between two selected paths as if it doesn't even exist. The result is an incongruent trap that may look totally out of place with your illustration (see "Selective traps").

Illustrator's Trap filter can't accommodate three of my five trapping scenarios, but it manages to offer satisfactory but limited workarounds for two of these.

1. Object against object. Illustrator traps one selected object against another just fine. You can reduce ink coverage to prevent overly dark traps and convert spot-colour traps to their process-colour equivalents. It's even smart enough not to create traps when the colours are too similar to warrant a trap.

2. Partial overlaps. Illustrator simply creates a trap around the edge where each pair of selected objects meets and ignores edges that don't touch.

3. Objects against gradient. Sadly, the Trap filter can't accommodate paths filled with gradations. However, if the foreground path is filled with a spot colour, you can assign a stroke to the path and set the stroke to overprint. Just make the stroke twice the width that you would have made the trap, because the stroke is centred on the path. A 0.2-point trap, for example, warrants a 0.4-point stroke. (This technique doesn't work for process colours.)

4. Object against image. You can't trap imported images, either. Again, you can overprint spot-colour strokes, but you're otherwise out of luck.

5. Keep-aways. You can easily create a keep-away by applying a plain black stroke to a saturated black shape. Since the black stroke extends beyond the boundary of the shape, it serves as a natural trap.

Another of Illustrator's limitations is that it traps fills only, not strokes. If you want to trap a stroke, you have to first convert it to a fill (using the Outline Path filter) and then apply the Trap filter.

Adobe Photoshop 2.5 and 3.0

Some state-of-the-art pre-press systems trap documents by first rasterizing them to pixels, then modifying the pixels. Together, Photoshop (£725; Principal, 0706 832000) and Illustrator constitute a more rudimentary but nonetheless functional trapping system.

When you open an Illustrator document in Photoshop, the latter converts the illustration into an image according to your size and resolution specifications. Once Photoshop has rasterized the image, you can apply the program's trapping function to the image as a whole. The operation is fully automated, offering only a single option for specifying the maximum width of the trap. And yet this function handles nearly all trapping scenarios, even going so far as to incrementally reduce the width of the trap as the colours of neighbouring areas grow more similar (see "Rasterize and trap").

1. Object against object. 2. Partial overlaps. 3. Object against gradient. 4. Object against image. Since Photoshop rasterizes all objects to pixels, it traps objects, partial overlaps, gradients, and images uniformly and with equal success.

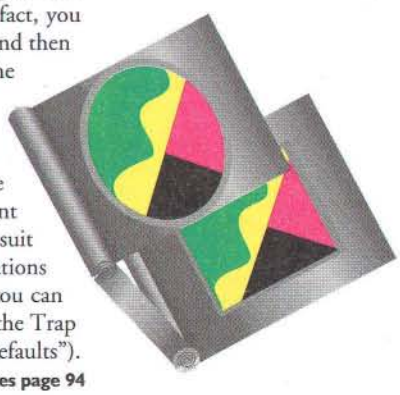
5. Keep-aways. The only trapping scenario that Photoshop doesn't handle is keep-aways with saturated blacks. Photoshop automatically converts black areas in an RGB or greyscale image to saturated CMYK blacks, but the Trap command doesn't generate keep-aways.

QuarkXPress 3.3

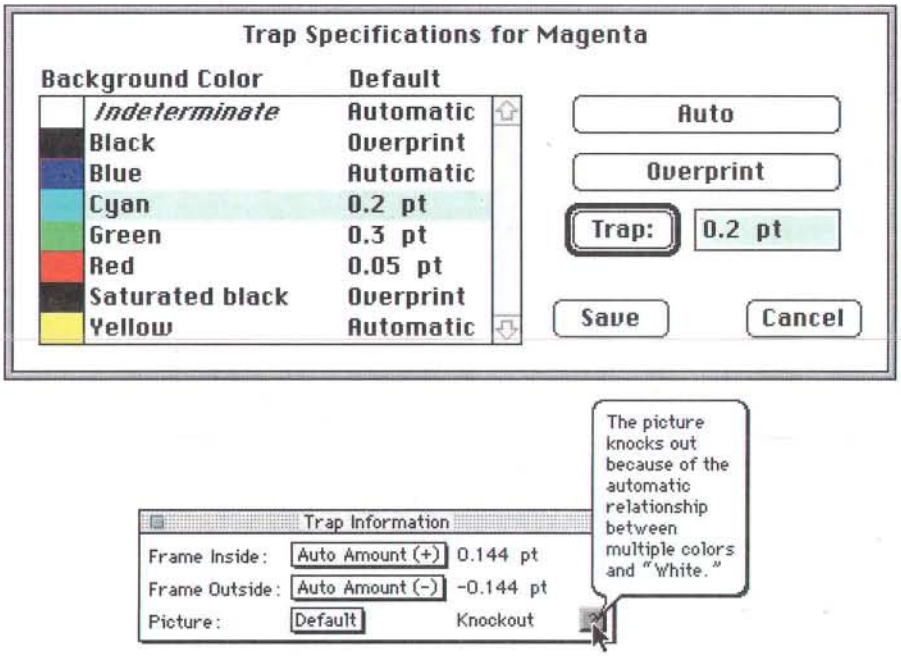
Although the trapping options supplied by page-layout programs are generally more capable than those in Illustrator and Photoshop, they are also less satisfying because you do not get any direct screen feedback. In fact, you cannot see any results until you print the file, and then you have to hold the proofing pages up to the light to accurately gauge how the traps fit.

Otherwise, you get flexible and functional trapping in QuarkXPress (£895; Computers Unlimited, 081 200 8282). You can specify the default settings for every object in your document and leave it at that. Or, if the defaults don't suit every occasion, you can override your specifications for a single colour. If that's still not enough, you can select an object and change the settings inside the Trap Information floating palette (see "Overriding defaults").

continues page 94



Overriding defaults



QuarkXPress provides both global and selective trapping functions. You can override your global settings for a specific colour (top) or a single object (bottom). When setting traps for colours, you can change the width of the trap and whether or not it overprints, but that's all. When selecting a single object, however, you have the additional option of requesting a spread, a choke, or a straight knockout (no trap).

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And unlike Illustrator, QuarkXPress is capable of trapping strokes (which it calls frames) independently of fills. Quark even provides special compensation for text, applying trapping only when the form of the characters will not be adversely affected.

1. Object against object. QuarkXPress can trap objects against objects, but it cannot blend the colours in objects, as Illustrator and Photoshop can, nor can it reduce ink coverage to prevent dark traps. Rather, it simply overprints the existing colours in an object. It's not the best solution (especially for process-colour traps) but it's frequently acceptable.

2. Partial overlaps. Quark can't vary the thickness of a trap as it surrounds the perimeter of an object. If an object appears in front of more than one object, and if one background object calls for a choke and the other a spread, Quark instead applies a single trap (according to its Indeterminate value) to the forwardmost object. Again, it's not the ideal solution, but it usually works.

3. Object against gradient. As long as a gradient and a solid object are on different separations, QuarkXPress spreads the object to trap the gradient. But because Quark can't mix colours, it can't trap two neighbouring gradients.

4. Object against image. Quark can spread spot-colour objects onto full-colour images or process-colour objects onto single-colour images. But it can't mix process traps with the pixels in a full-colour image.

5. Keep-aways. If a saturated black object is positioned in front of another object, QuarkXPress automatically creates a keep-away, choking the other colours without changing the black. Otherwise, you have to specify a trap in the Trap Information palette.

PageMaker 5.0 and TrapMaker 1.0

Nine years after its introduction, PageMaker (£695; Principal, 0706 832 000) finally supplies trapping capabilities in the form of its TrapMaker Addition (£45-available exclusively from Adobe direct; 081 606 4000). I can't say that TrapMaker was worth the wait, but it wins my vote as the most robust trapper available to a desktop publishing program. (Adobe plans to integrate automatic-trapping features in future versions of PageMaker.)

TrapMaker is good at determining where to position a trap. To accomplish this, TrapMaker evaluates colours according to their neutral densities – how light or dark each colour is when all its primary colours are taken into consideration. If two objects have relatively similar densities, TrapMaker centres the trap on the edge of the two objects, rather than drawing it on one side of the object or the other.

TrapMaker's other controls enable you to specify a type size below which text trapping is prohibited (to ensure legible text) and customize trapping settings for certain colour combinations. However, you cannot adjust settings for selected objects as you cannot in both Adobe Illustrator and QuarkXPress.

1. Object against object. In this department, TrapMaker, like QuarkXPress, doesn't mix values on a single separation. However, TrapMaker can mix values differently from one separation to the next, effectively creating independently coloured traps, and it can avoid overly dark traps by applying the lighter of two values in a single separation.

2. Partial overlaps. While QuarkXPress spreads or chokes uniformly when partial overlaps are involved, TrapMaker draws a different trap for every pair of intersecting objects and never draws a trap over blank paper.

3. Object against gradient. Since PageMaker is one of the few programs that can't create gradations, it's little surprise TrapMaker can't trap them.

4. Object against image. TrapMaker ignores imported images entirely, creating knockouts without traps, even if an image resides on a single separation.

5. Keep-aways. TrapMaker automates the printing of keep-aways, but only if the object filled with saturated black overlaps another object (similar to QuarkXPress). If not, you have to slide a dummy object behind the saturated black object to force a trap.

Because TrapMaker is an Addition, its options aren't integrated into other portions of PageMaker. To use the Addition, you choose the TrapMaker command, set options inside a dialogue box, and print directly from there. It is also worth noting that TrapMaker has online documentation only. You get a poster that shows off TrapMaker's capabilities, but no printed manual. Even so, the features are sturdy enough to satisfy most desktop publishers.

None of these programs are able to handle all your trapping requirements – they all failed at least one of the five trapping scenarios. Just the same,

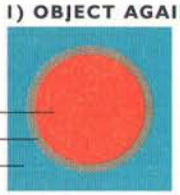
continues page 95

Five Common Process-Colour Trapping Scenarios

Below are examples of trapping when printing with process colors. Here, as in all process-color trapping scenarios, a trap is unnecessary if adjacent colors are made of similar percentages of the same inks. Trapping with spot colors may differ somewhat.

1) OBJECT AGAINST

C	M	Y	K
—	100%	100%	—
50%	50%	50%	10%
100%	—	—	20%

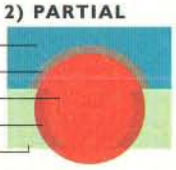


Plates viewed separately

When one object appears in front of or next to another, and the objects have no process colours in common, you need a trap to prevent any gaps from occurring when the file is printed. The trap is an area at the point where two differently coloured objects come in contact with each other; it's made of inks used in both.

2) PARTIAL

100%	—	—	20%
50%	50%	50%	10%
—	100%	100%	—
20%	100%	100%	—
30%	—	45%	—

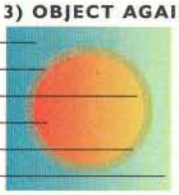


Plates viewed separately

When an object overlaps several other objects and partially extends into the wide-open spaces of exposed paper, the software must surround the forward object with many different traps, one for each pair of abutting colours, without trapping along the edges that border white space.

3) OBJECT AGAINST

100%	—	—	20%
50%	50%	50%	10%
—	20%	100%	—
—	100%	100%	—
30%	20%	80%	—
30%	—	45%	—



Plates viewed separately

In an object-oriented program, a gradation (sometimes called a vignette in trapping circles) is actually a series of incrementally coloured objects enclosed in a mask. If an object partially covers a gradation, the software has to trap the object against every one of the masked colours. Things get even more complicated when one gradation overlaps another, as is commonly the case in high-end illustrations.

4) OBJECT AGAINST

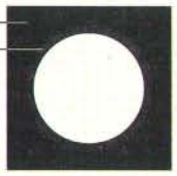
Various percentages			
Various percentages			
100%	—	—	20%

Plates viewed separately

Ideally, to trap an object against a bitmapped background, the software should calculate traps between the object and every pixel in the bitmapped image adjacent to the object's border. A less sophisticated alternative is to spread and overprint the edges of the object against the bitmap. The result won't look as good because the object may trap where it doesn't need to (for example, against a white background).

5) KEEP-AWAYS

70%	70%	70%	100%
—	—	—	100%



Plates viewed separately

A saturated black (100 percent black mixed with smaller percentages of cyan, magenta, and yellow) won't appear darker when overprinting objects with other process-colour mixes; it also creates a true midnight black not possible using black ink alone. But the brighter inks can creep beyond the edges of a saturated-black object. To avoid getting a tiny fringe of colours, you need a keep-away: a hairline border of unsaturated black that's too thin to distinguish from the saturated black. Should the colours misregister a bit, they just print on the unsaturated black.

consumer-level desktop trapping is getting better all the time, and it may one day meet the needs of the most discriminating designers.

In the meantime, the question is, When should you attempt trapping on your own and when should you leave it to the experts? The answer depends on your finances. All but the most exclusive service bureaus charge higher (sometimes 50 per cent more) per-page prices to trap documents as they print them; the truly high-end printers include trapping in the per-page price whether you like it or not.

If you're willing to pay the price, pre-press professionals have access to superior equipment and software and will invariably come up with better results. But if you're publishing on a budget, consumer trapping options (particularly those available to Illustrator and PageMaker) are good enough to eliminate the most obvious gaps in your document.

Without a doubt, the most important thing to remember when trapping your own documents is to consult with your commercial printer. Only your printer knows the accuracy of the offset press that your document will be printed on.

Most modern presses have small tolerances, typically in the neighbourhood of 0.2 point (or about 0.1mm), which is why 0.2 point is the default width offered by most trapping software.

And keep in mind that there's always the option to create a document that doesn't need to be trapped: overprint text whenever possible, make sure overlapping objects contain at least one shared process colour, and assign either no borders or overprinting black borders to your imported images. You'll never have to worry about trapping again. **MW**

Deke McClelland is the author of several books about high-end graphics programs, including *Macworld FreeHand 4 Bible*, *Macworld Photoshop Bible, second edition* (both 1994 releases from IDG Books Worldwide), and *The Illustrator 5.0/5.5 Book* (Peachpit Press, 1994).

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Expert Graphics

Graphics professionals share their secrets.

by Cathy Abes

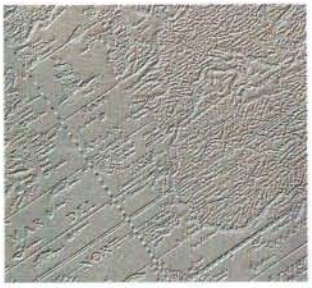
Artist: Annabelle Breakey is a photographer who specializes in digital imagery. Her advertising clients have included Canon , Logitech, and Sprint. The image shown here appeared in the Digital Image Exhibition of the 1994 Photoshop Conference.

How It Was Done: Originally created for a client's marketing brochure, this image, called "Global Strategy," was redone as a stock photo for Tony Stone Images, a stock-photo agency. Breakey began by photographing a piece of wrapping paper containing an image of an antique map of the world. After scanning it into Photoshop, she rotated it to the angle she wanted – about 45 degrees counterclockwise. Because rotating it produced blank areas at the top and bottom, she had to fill those areas by cloning and copying/pasting from various parts of the map.

Next, to provide a more textural, three-dimensional look and eliminate the moiré pattern that resulted from scanning the wrapping paper, she used Photoshop's Emboss filter on a copy of the map, then composited the copy with the original. After adding a checkerboard pattern to the map, she darkened half of the squares and lightened the other half with Brightness/Contrast.

At this point, Breakey began placing the chess pieces on the map/checkerboard background. For each of the chess pieces, she made a shadow by drawing a path around the piece and scaling it to make a long, thin shape. Then she made a path from the selection (Path palette). After exaggerating the shape to give it more definition, she saved the path and made it a selection (because paths can't be rotated). Once she had pasted the selection into the main image at minimal opacity, she rotated the selection to the correct angle. Then, so she could more easily and precisely refine the shape, she made it into a path, saved it, selected it with a 10-pixel feather, and darkened it with Brightness/Contrast. MW

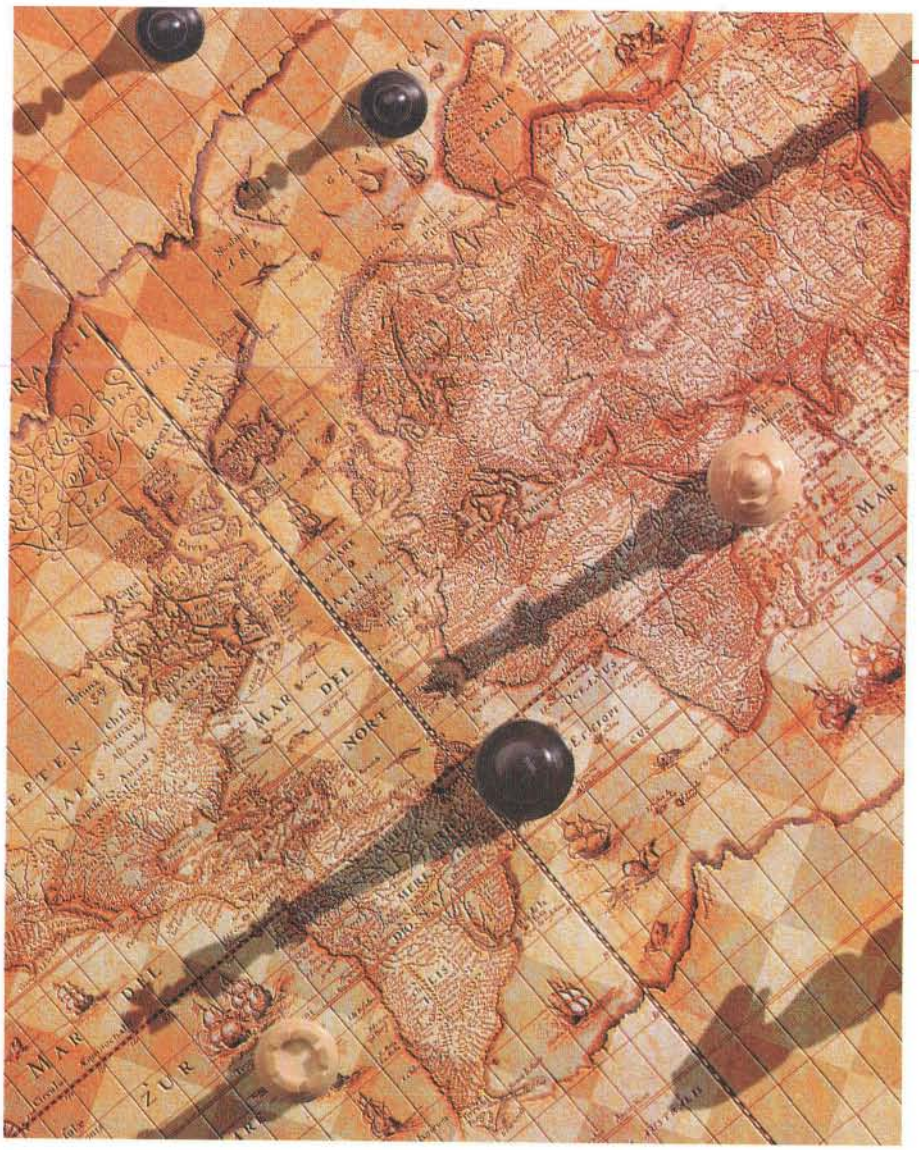
1 A detail of the original map, taken from a sheet of wrapping paper the artist scanned into Photoshop.



2 With the whole image selected, Breakey copied it and applied Photoshop's Emboss filter to the copy.

3 To remove the grey produced by the Emboss filter, she pasted the embossed copy over the original map using Composite Controls in Lighten mode at 80 percent opacity, then deselected. To enhance the colours, she boosted the saturation to about +45, then –10 Brightness, +10 Contrast.

4 Using the pen tool to make a grid for the checkerboard pattern, she selected alternating squares and darkened them with Brightness/Contrast, then used the Inverse command to select the other half and brightened those, to complete the checkerboard effect.



5 The original photo of the chess pieces scanned into Photoshop. Some were placed on the map; others were used only to create shadows.

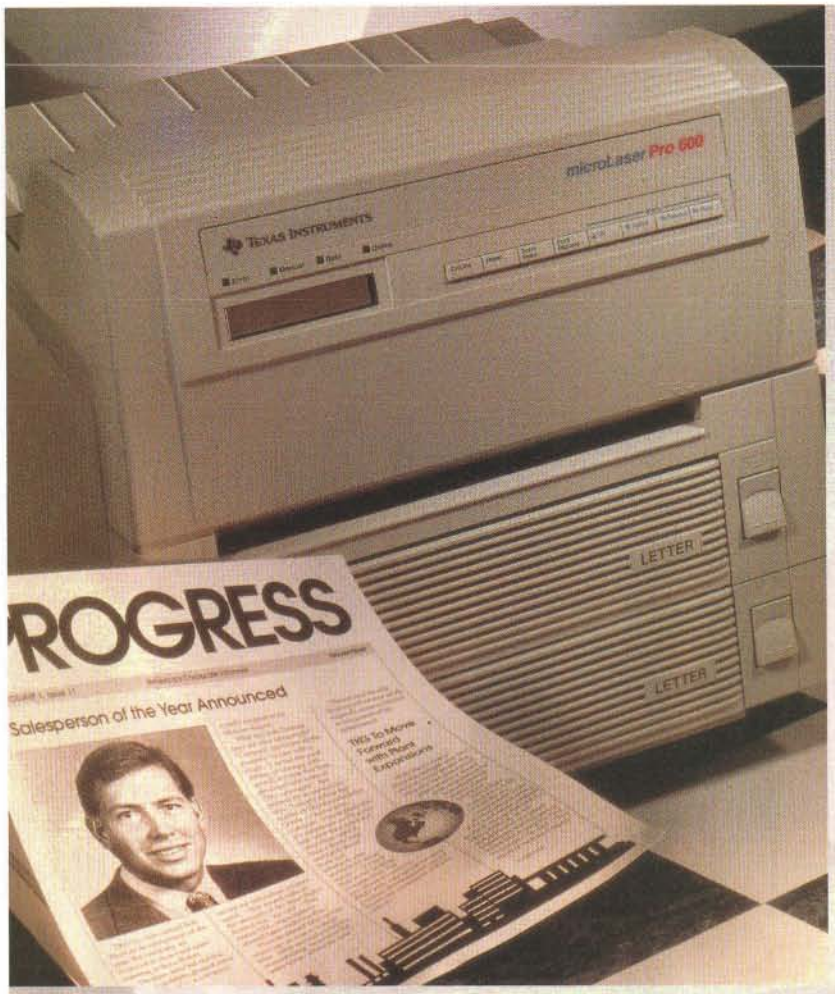
6 To create a shadow of the knight, Breakey made a pen-tool path around the piece, made a selection from the path, copied the selection, and pasted it into a new document, rotating the selection until it was horizontal.

7 Using the Scale command without constraining it (Image> Effects), she stretched out the chess piece to make a long, skinny shape for the shadow.

8 Pasting the selection made from the path into the illustration at 1 percent opacity made the shadow completely transparent. After rotating the shadow selection and making it a path (at 1.3 tolerance), she saved it, selected it with a 10-pixel feather, and reduced Brightness to –80 and Contrast to –15.

THE TOOLS

Hardware: Mac IIci with 64MB of RAM and a 210MB internal hard drive; DayStar Digital 40MHz accelerator board; 1GB external hard drive; 44MB SyQuest removable-cartridge drive; 21-inch SuperMac monitor; Wacom ArtZ ADB 6" x 8" tablet.
Software: Adobe Photoshop 2.5.1.



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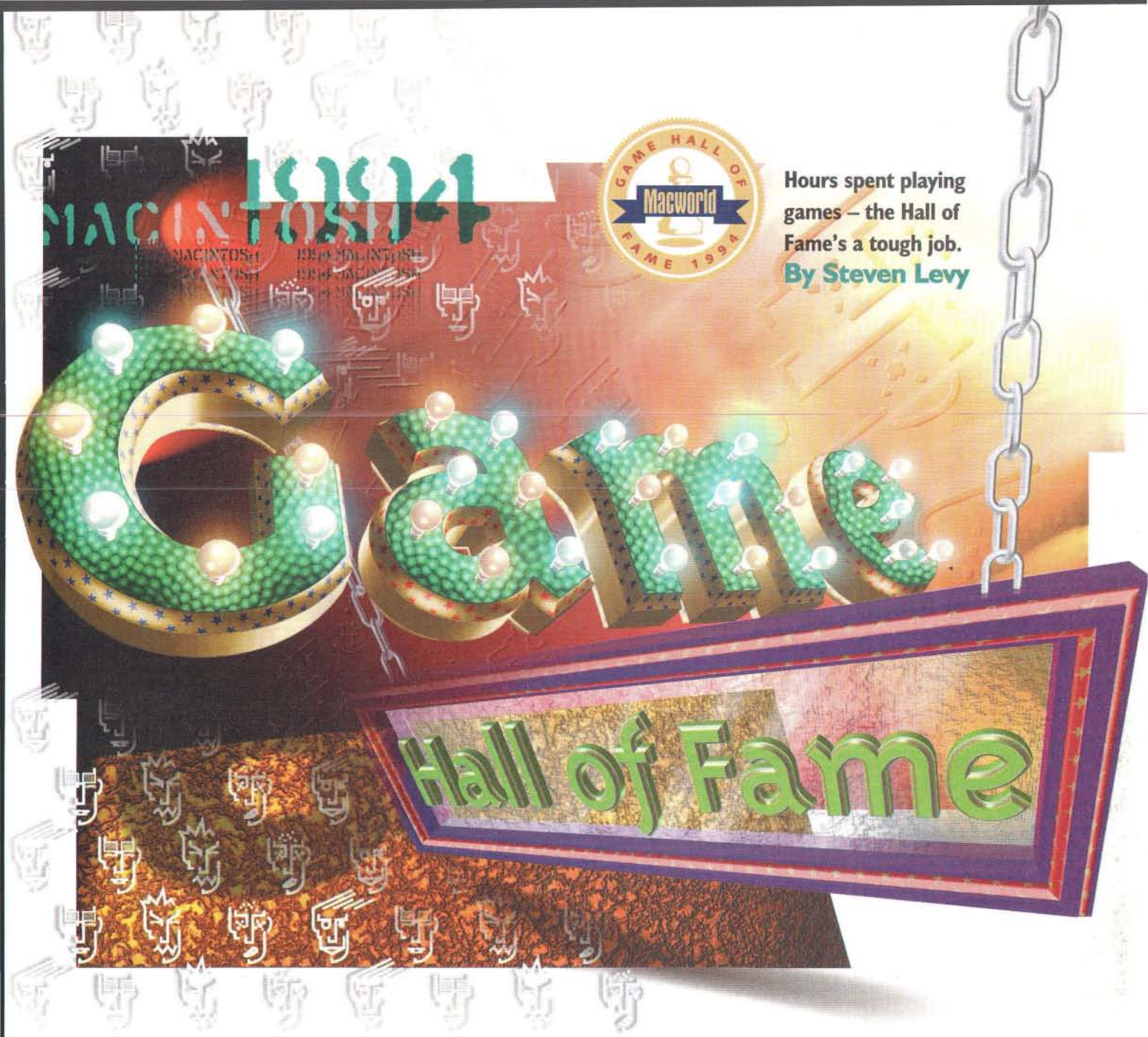


Hours spent playing games – the Hall of Fame's a tough job.

By Steven Levy

1994 Macintosh Hall of Fame

It was closing in on 3 a.m. when I finally called the meeting to a halt.

"We're getting nowhere," I told the categories committee of the Macintosh Game Hall of Fame, casting stern glances around the conference table. "We're going to have to end this session and do what we always do when it comes to categories – stay a little flexible."

The committee members hardly seemed to hear me. One had booted up SimCity 2000 on a PowerBook and several had gathered around it, suggesting locations for the power plant. I walked over, elbowed the kibitzer aside, and wiped out the settlement with a tsunami.

"Look here," I cried. "This is a tough business, and I know we're all tired. We've spent months loading disks into Mac II's, Performas, and Power Macs. We've explored dungeons, pyramids, haunted houses, and fantasy islands. We've flown so many F-16s that we see heads-up displays in our dreams. We've shot enough aliens to win a Senate race in California. As curator of the Mac Game Hall of Fame, I say it's time to call it a day. I've had it. Let's go home."

"Does this mean no separate Power Mac category?" Finster asked. (He's got an 8100.)

"I told you, we ruled it out because we finally decided that all our games should run on the Power Mac. We'd like to acknowledge great upgrades to existing games, but if they're already in the Hall, Power Mac people will find them."

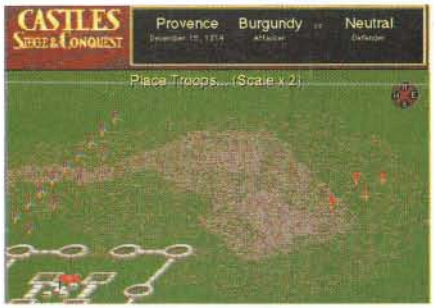
"Are we really going to lose the CD-ROM category?" asked Sneed. His uncle donated the cash for our New Media wing, so he has an interest in the subject.

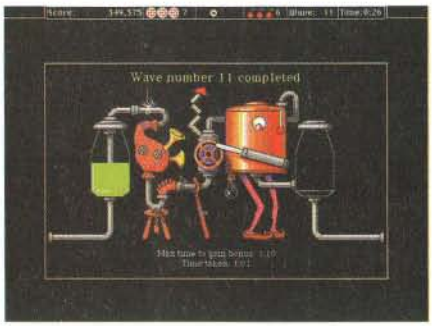
"We'll have to," I answered. "Adventure games hardly come on floppies anymore, and soon more than half our games will probably come on CD. Even shoot-'em-ups are going CD. Look at that Star Wars game, Rebel Assault."

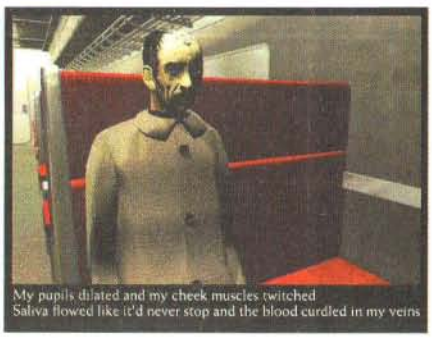
"I still think we should have picked that one as a winner," said Ricksecker, a trustee who's seen *Return of the Jedi* 14 times.

continues page 100

ILLUSTRATION: GRAHAME MURDOCH
Created in Adobe Photoshop, Illustrator & Dimensions using a Centris 650 24/230







Castles: Siege & Conquest

You, as Burgundy, are having a bad year – 1314, to be exact. Your subjects in Provence have revolted, even before your castle is built. So now you reclaim the turf with your warriors. Fortunately, you outnumber them, and a massacre ensues.

Crystal Crazy

This odd device for awarding bonus points provides a rare respite from the barrage of weird foes that attempt to eradicate you while you gather crystals, build jigsaw puzzles, and smash household obstacles against walls.

F/A-18 Hornet

Remember those Gulf War days? Well, you too can pitch smart bombs. Your targets even include some of those classy-looking bunkers. In this run, though, our heads-up display tells us we're much too close for comfort.

Gadget

This charming, rather fetchingly dressed fellow is a colleague of the mysterious scientist you are hunting in this game. You meet him on a train that is straight out of a Hitchcock movie and quickly develop vertigo.

"Sorry," I said testily. "We decided any game that was unplayable without a joystick couldn't get in. But that's not the point. Categories aren't even the point. What's the difference between adventure and role-playing? Between role-playing and strategy? Strategy and brain game? Brain game and arcade? It doesn't matter. All that matters is greatness. That's what we're here for, isn't it?"

I had finally silenced the group – no mean trick considering that just about every member has a serious case of attention deficit disorder (not surprising in a collection of computer-game addicts).

"Look, when a game author designs a product, he or she shouldn't be constrained by what category it's in. The idea is to make it great. And that's the idea here at the Macintosh Game Hall of Fame – to identify and honour greatness. The ten we picked this year are tagged with categories, but that's more for purposes of identification than to imply that a game fits in only one place."

There were a couple of nods of assent. "I know that there are more games out for Windows than for the Mac," I continued. "But the Mac games are trendsetters. They're special. And the very best of them always wind up here, in the hallowed halls of our Pittsfield, Massachusetts, facility. Final choice, of course, is determined by a highly subjective but ultimately infallible curator. We're a tradition. Entry into the Macintosh Game Hall of Fame is the ultimate honour, and the Class of 1994 is a terrific one."

"So what were the final choices?" asked Ricksecker.

"I'm glad you asked."

Best Adventure Game

Myst

Electronic Arts, 0753 549442; £34.

The first few frames of Myst (the sunken boat by the dock on the mysterious island, the gear house on the hill, the weird box with the now notorious marker switch on top) are destined to become part of gaming history, ranking alongside the opening words of the first adventure game, Crowther and Woods' Adventure.

Myst is that rare game that doesn't just push the envelope, it shreds it. Gone are the most annoying parts of adventure games – vocabularies that don't understand you, people you can't talk to, wrong moves that get you killed and make you start over. You try to unravel the enigma of the island by exploring it, but there's no time pressure to distract you, no arbitrary punishments put in your way. You can linger to take in the sights and sounds – which are gorgeous and universally intriguing.

The brothers Rand and Robyn Miller, whose earlier game, The Manhole and Spelunx, only hinted at greatness, have masterfully provided the framework to create the illusion of a fully fleshed-out alternate world. It's easy to get lost in Myst, but it's not impossible to find your way to a solution.

You have to familiarise yourself with the books in the library, check the seat that looks like a dentist's chair, and really get to know your tower. And a story will emerge – one that promises to have some fascinating sequels.

That's for later. Right now, if you have the slightest interest in adventure gaming, you will run out and buy this disc. If you own a CD drive, you've probably already bought Myst. And if you don't have such a drive, well now there's a compelling reason to buy one.

Best Multimedia Game

Gadget

Synergy Japan, 01081 3 5272 8950; $79.99.

If Myst has a Tolkienesque mystery and wonder to it, Gadget is sort of a weird mix of Dennis Potter, Alfred Hitchcock, and the dream sequence in "Twin Peaks." In theory, the goal of this psychological thriller is to find a scientist named Horselover. But the real point is simply to experience the gestalt of the vaguely pre-World War II, London-ish universe, hauntingly rendered by director Haruhiko Shono and spookily enhanced by the music of composer Koji Ueno. The look-and-feel is awesome, and the technology behind it prevents the limitations of the CD from dampening the effect as you navigate this strange world. Interspersed throughout are eerie, black-and-white QuickTime segments. The people you meet are truly bizarre and apt to come up with statements like: "To a metallic whine, the pain drilling through my skull, I began slowly to drift into unconsciousness." Oh, really?

How strange do things get in Gadget? Let's put it this way: at several places in the game, you may well feel like you're levitating. This is the game to show your friends when they say multimedia is a bore.

Best Strategy Game

Castles: Siege & Conquest

Interplay, 0235 821666; £40.

What better use for a computer than to immerse you in the heart of the Dark Ages? You are one of several powerful lords in medieval France. If you acquire enough territory and become sufficiently rich and powerful, you may be king one day. To do this, you must maintain the local economies of the provinces you control, keep good relations with most of your rivals, proceed to knock them off and, above all, make sure the Pope likes you. (Every so often, you'll have to slip him some costly indulgences – but remember, he's the one who crowns the king.)

The key to your domain is the castle. You can either create your own or use a pre-existing design. But how you design is important, because you can count on someone laying siege to your keep. One of the more depressing parts of your day comes when you are caught short-handed, with an insufficient number of defenders having to face a horde of invaders that are armed with catapult and battering ram, ready to grind your dreams of kingship to dust.

There are several absolutely priceless aspects to the game. One involves the rather comical (at least the first few times) little movies that pop up on the screen at crucial moments. Another is the ability to send saboteurs and spies into neighbouring provinces. It's a great feeling when one of your soldiers swipes gold from a rival. More significantly, you can actually command your troops. This requires some research into medieval combat. Thankfully, unlike some other strategy games, Castles: Siege & Conquest doesn't require a master's degree in history to play a decent game. But the more you play, the more you'll want to learn about life in 1314 and the better to ascend the throne.

Best Simulation game

SimCity 2000

Ocean Software, 061 832 6633; £40.

The original SimCity is a very tough game to top. But by maintaining a low learning curve, SimCity 2000 manages to keep the spirit of its predecessor, while greatly enhancing the detail. Borrowing some of the more elaborate screen displays of A-Train (another Maxis game), Will Wright and Fred Haslam have conspired to make you a very powerful (but not omnipotent) mayor of a city of your own design (or one of the included cities). Enhancements include a water infrastructure, universities, libraries, prisons, and hydro-electric plants. You can construct truly amazing metropolises.

But as in the original, the real meat of the game is dynamic interaction. From the interplay of forces – what you want to build, what your citizens want, and what nature (including human nature) will allow – emerges a city. As your efforts at construction will teach you, anticipating consequences is key. But sometimes you can't avoid the Sim-urban version of the butterfly effect known in chaos theory (a butterfly flapping its wings in Singapore so profoundly affects the weather that a thunderstorm erupts in Kansas). Forgetting to put a police station near a residential neighbourhood, an over-reliance on auto transportation, or spending too much on a stadium could eventually lead to dire consequences. An increase in property taxes might contribute to riots in the streets.

But the fun is still there, particularly in SimCity 2000's cheerful appeal to nihilism. Lurking under the menu bar is the option to invoke a number of disasters that allow you to damage your empires in entertaining ways. If that isn't enough for you, Maxis offers (as an optional extra) a group of famous actual or would-be disasters. You can replay Hurricane Andrew in Homestead, Florida; launch riots in the streets of Washington, D.C.; or sit smugly in your electronic cottage while a microwave-beam disaster wipes out Silicon Valley. Am I a wrathful god? Definitely!

Best Arcade Game

Prince of Persia 2: The Shadow & the Flame

Softline, 081 401 1234; £35.

Again, a sequel manages to add layers of complications, while preserving the excellence of the original. Only now does it dawn on us that the prince is really Aladdin, though this is never overtly mentioned (perhaps to stave off evil magic from the omnipotent empire of Disney). Still, this might have been called The Revenge of Jafar: the evil vizier contrives to get our prince banned from the kingdom, and your task is to fight about a billion nasty swordsmen (who get fiercer as you pass through the levels), try out some magic, toss some fireballs, and move your prince-figure in all sorts of imaginative ways to pass through the mazelike complications that have charmed the fans of games from Lode Runner to Super Mario.

The game controls work very well, and fairly simple keyboard commands elicit elaborate responses from your prince. And the visuals are tremendous – you go from waterfront to cavern to palace, with all sorts of interesting obstacles in between. But what really elevates Jordan Mechner's sequel is that it augments the duck-slash-jump movements of an arcade game with a mildly baffling series of challenges. On each level you have to figure out the right path to take and the proper sequence of events. So besides being quick with your fingers, you must also be quick with your wits.

Best Shoot-'Em-Up

Crystal Crazy

Softline, 081 401 1234; £40.

Does it seem as if the Game Hall of Fame has a lot of sequels this year? Unlike with movies, the second time around for games is often better. So it is for Crystal Crazy, by Patrick Buckland and Alasdair Klyne, a shoot-'em-up so whimsical that you never for a moment think you're doing anything destructive. Yet you still get the warm, cozy, destructive pleasure that comes from mowing down vast legions of enemies in the course of collecting your crystals.

In various waves, you attack (and are attacked by) Fracturefluffies, Pro Dupies, Wanglefoots, Yackertacks, and Rawpuscles. And of course the dreaded Space Cow. You fire at all of them from your happy little circle/spaceship, which, though controlled by the mouse, tends to keep its momentum a little longer than you wish it would.

In Crystal Crazy, however, there's far more to the game than just shooting. Sometimes you need to smash objects against the walls while at other times you have to wash your diamond over picture pieces until a complete incarnation materialises. Then there are times when you even have to move puzzle pieces to construct pictures. There's also new sorts of goodies to pick up, weirder ways to shoot things, bonus rounds – in fact, simply more of everything. And, of course, the unspeakably satisfying, finish-a-wave aaahhhh sound remains.

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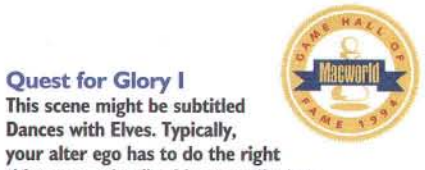


Quest for Glory I

This scene might be subtitled Dances with Elves. Typically, your alter ego has to do the right thing to survive (in this case a jig, but not in the circle). This role-playing game obviously draws on fairy tales – but it's far from Grimm.

Myst

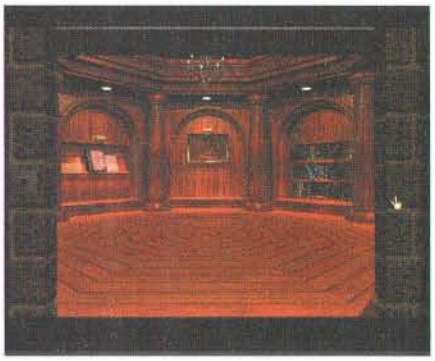
A view of the library from the fireplace. And why are you in the fireplace? To solve another puzzle in the most absorbing adventure game since the genre was invented.

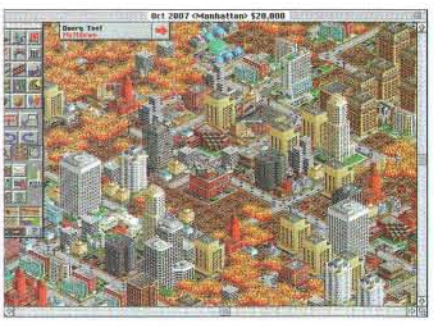
PowerPoker

The showdown: the human player, on top, playing an obscure variation of poker-style baseball (in which a total of eight cards are dealt) is obviously perturbed as his two pairs get beaten by a full house. In the current game, fours are wild.

SimCity 2000

Well we knew we shouldn't have put that nuclear power plant in the middle of Manhattan. Now there's been a meltdown, and it's another bad day in New York. Good thing it's only SimCity 2000.





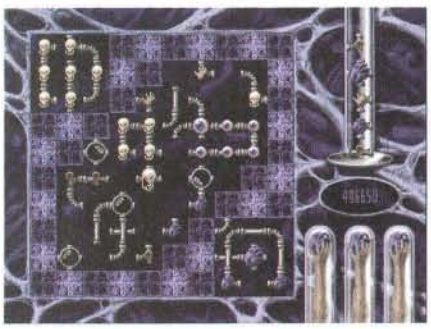
Best Brain Game

Troubled Souls

Varcon Systems, 619/563-6700; $49.95.

OK: picture a marriage between Tetris and that fixture-fitting plumber game of a few years ago called Pipe Dream. The minister who marries them is Edgar Allen Poe. Now you have Troubled Souls, a truly bizarre yet addictively compelling game created by Randy Reddig, a 17-year-old programmer with a truly nasty streak. Troubled Souls requires you to create rings, or closed circuits, from puzzle parts that drop down a chute. Things get tricky when the falling pieces come attached to, um, body parts; then you have to match, say, the severed ear pieces with other severed ear pieces, and the engorged heart pieces with the same. All this while ghoulish, throbbing music pulses in the background.

Though this sounds rather gruesome, the game is actually a lot more seductive than sadistic. The gothic elements are really just elaborate window dressing for a well-balanced (and terrifically challenging) game-playing experience.



Prince of Persia 2:
The Shadow & the Flame After negotiating the beach on the desert island, the disenfranchised prince makes his way down a series of hostile caves, only to encounter a sword-bearing skeleton. En garde!

Troubled Souls
The point is to make rings out of little puzzle pieces with, well, body parts attached. The pieces drop from the chute on the right. This is towards the end of the game, when space is scarce.

Best Flight Simulator

F/A-18 Hornet

Softline, 081 401 1234; £59.

Every year someone comes up with an absolutely mind-blowing simulation of a hot fighter plane, and in the face of some stiff competition, this year's hot model is the F/A-18 Hornet. It's a combination of dizzying verisimilitude, relatively straightforward game control (though some complexity is inevitable), and graphics so vivid that it feels as if you're in the cockpit. You can even play it with your friends – four on a network, or head-to-head via modem.

You get what you expect when you're strapped in the plane – a frighteningly realistic view of the heads-up display and instrument panel of one of the most fearsome fighters that technology (or McDonnell-Douglas) has ever produced. Of course, you can alter the view, but experienced jockeys rely on radar – once they figure out how it works.

Take a few minutes to assess your avionics and weapon systems in the 256-page manual (filled with charts, diagrams, photos, and the kind of talk that gets Tom Clancy's blood boiling). Better yet, work your way through those training fights. You'll need them, because you'll be using live ammo when you get to the gist of this game – performing vital military missions in the Middle East. By that time, you'll want to be fairly experienced in taking off and landing on aircraft carriers, because your foes in this simulation are pretty deadly.

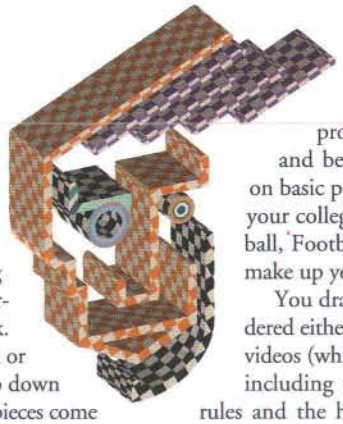
If you liked the videos of the Gulf War, you'll love F/A-18 Hornet.

Best Sports Game

PowerPoker

Electronic Arts, 0753 549442; £40.

Why is it that a lot of the great outdoor sports games from other platforms don't make it to the Mac? Can't figure it out. Meanwhile, there are plenty of indoor games to play, and for anyone who has sweated out aces and eights while wondering whether the cool character across the table is holding a trump card, here is the poker



experience fully captured, complete with digitised sounds of card shuffling. Designer Todd Oustz has provided everything short of the crisps and beer, including an array of variations on basic poker that might even stump some of your college pals. Tennessee, Anaconda, Baseball, Football – they're all here. You can even make up your own.

You draw chips against five opponents rendered either in cartoony graphics or QuickTime videos (which are too slow). Almost everything, including the colours of the cards, the game rules and the house stakes, is under your control – except, of course, the luck of the draw. Still, you are at an advantage here. PowerPoker provides you with the information you always want but can never remember when the chips are, literally, down. What are the odds of improving a hand? What's the chance that her ace-high is really a pair? All of this knowledge and much more is available to you – PowerPoker can even chart the relative success of your hands over the course of the evening.

PowerPoker has one fault, however: once you learn how some of your opponents play the game, you'll understand all too well how to read some of their rather artless bluffs. (And at times, a well-planned offensive on your part will scare off a superior hand.) But for a casual game of Draw or Hold 'em – or as a wonderful training ground for the real thing – PowerPoker is fine. Plus, it saves you the trouble of rounding up five easy mugs. And if you do have friends on your network, you can use the game as a house dealer and a bank.

Best Role-Playing Game

Quest for Glory

Sierra On-Line, 0734 303171; £40.

Have you ever noticed how serious role-playing games can be? All these tools of mayhem, the lists of sepulchral spells, and the grim accumulation of dead foes. So it's a genuine pleasure to welcome Quest for Glory I, which merges classic role-playing aspects (building up a character's attributes by vanquishing enemies, all in service of a larger goal) with the more playful mood and interactivity of Sierra On-Line's King's Quest adventure-game series.

The graphics here are every bit as vivid as the plot, and the atmosphere is more like a fairy tale than your typical dungeons-and-dragons deal. The idea is to be a hero (sort of a single-handed Seven Samurai) saving the town of Spielburg (bad pun) from oppression by thieving brigands. You decide whether you want to be a fighter, magician, or thief; check out some weird folks in town; and venture into the forest, where all sorts of hostile critters hang out. When you encounter someone or something itching for a fight (a rather pedestrian assortment of creepies and monsters await you), you go into combat mode. At that point Quest for Glory takes on an arcade aspect, but ultimately the determining factors in your character's survival are strength, health, and stamina.

What's nice about the game is that things never degenerate into the slaughterhouse mentality of some other role-playing games. You'll have some interesting interactions with people you meet, and you'll actually have to use your brain here and there. It's a kinder, gentler form of role-playing game, and one particularly well suited to newcomers to the genre, especially those familiar with adventure gaming. **MW**

Steven Levy's latest book is *Insanely Great: The Life and Times of Macintosh, the Computer That Changed Everything* (Viking, 1994).

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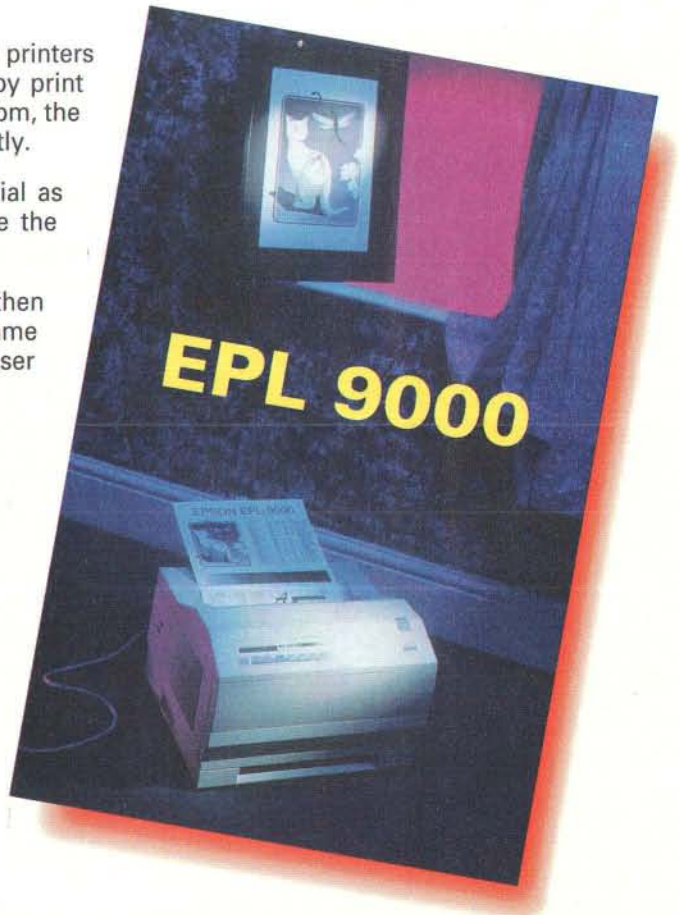

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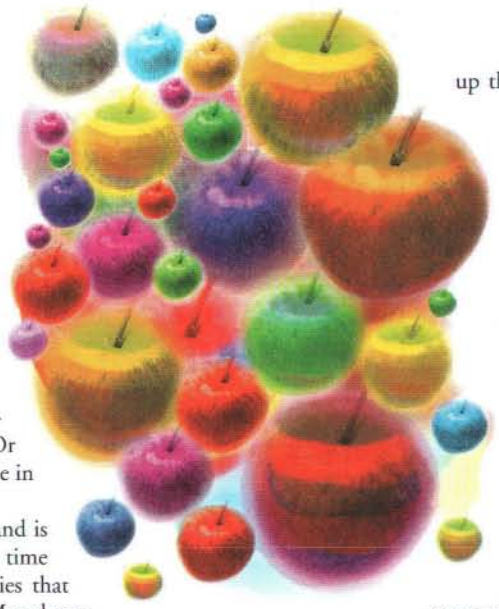
Send in the clones

Steven Levy

Now, Apple's licensing approach is a bad idea



At any other time in the past decade, Don Strickland's job description would have been a hell of an eye-opener. He is Apple Computer's vice president in charge of licensing operating systems. Talk about oxymoronic! Until 1994, directing Apple's efforts at licensing the Macintosh OS would have been the ultimate do-nothing job. Sort of like running the Vatican's effort to distribute birth control materials. Or heading the American trade office in Havana.

Yet that is what Don Strickland is doing: overseeing, for the first time ever, an effort to bless companies that wish to produce and sell Power Mac clones. (Apple is willing to discuss licensing clones of the 680X0, but no one seems interested.) As I write this, the names of potential cloners are being floated (everyone from Fujitsu to IBM) and by the time you read this Apple will probably have announced a few.

There are now about 70 people, says Strickland, "dedicated to the Mac clone effort," and he sees the number eventually growing to a phalanx of 200. Two hundred people, whose entire professional existence is devoted to renting out the Mac OS, the company's most valuable asset. Even at Apple it would be difficult to launch an effort of that size and see absolutely no result.

Mac clones are coming, and Apple is entering uncharted territory – dangerous territory. Expect the worst.

Of cursor keys and kings

To say that Apple Computer has always been protective of the Macintosh OS is an understatement of titanic proportions. In the chess game of personal computerdom, Apple has regarded the aggregation of elements that make up the Mac as the equivalent of the king. Anytime a possible infringement, even an imaginary one, came to light, Apple heard "check," and scrambled to protect the one piece in chess that is never sacrificed.

Others said that Apple's protectiveness was misguided. These critics did not think in terms of chess, but business. "Market share!" they cried, noting quite reasonably the constant perils of a company whose customers made up a mere sliver of the market pie-chart. The way to get a bigger piece of the pie was to bless the efforts of other companies to produce Macintosh clones. According to these pundits, if low-overhead, highly discounted overseas companies had stamped out $1000 computers that run Mac software, many people would have chosen the demonstrably superior Macintosh Way – especially in the crucial years before Microsoft introduced Windows 3.0, the first version of Windows worth running.

But Apple resisted, probably because its leaders saw what happened in the early 1980s with IBM. When Big Blue introduced its PC, it failed to prevent a tidal wave of clones that ran the same software. (This was due in part to clever maneuvering by Microsoft, which, unlike IBM, collected a royalty from the clone companies.) On one hand, MS-DOS became an industry standard – but on the other hand it wasn't IBM computers that people were buying. It was the low-cost foreign-made clones, or the mail-order clones, or the high-quality, innovation-laden higher-end clones. IBM had lost control.

continues page 106

ILLUSTRATION: ROBERT PURNELL
Created in Adobe Photoshop using a Centris 610 4/80

There was another way for Apple to get market share, of course – to get rid of the ridiculously high premium people had to pay to use the Mac. If Apple had cut its profit margins and made lower-cost computers, it would have won converts in the late 1980s. But Apple did not cut its margins and prices until the nineties, after the market-share battle was lost. And even now its prices aren't low enough to lure people over from the dominant camp.

Somewhat belatedly, market share is becoming an obsession with Apple. There is a real danger that third-party providers, particularly ones hatching innovative new software, will simply choose to ignore the Mac platform, and despite the stellar performance of Power Macs, Apple products will continue to be marginalized – or worse. Apple's answer is clones. "Our worldwide market share is now 11 per cent," says Strickland. "The domestic share is around 15 to 16 per cent." By blessing clones, he says, "We want to grow the logo by 25 per cent, which means three to four points in the next three to four years." Strickland is talking a million clones a year.

Self-inflicted revolution

It sounds nice, picking up those points. But the accommodations for this event have led Apple to remake its very foundation – in a sense, to inflict a revolution upon itself. It all begins with what Apple calls "a new visual identity for the Macintosh Operating System," which is now officially known as the Mac OS. The logo is a variation on the familiar happy-Mac – a jagged line runs down the centre so you view the smiling face both head-on and in profile simultaneously. Some might interpret it to mean that happy-Mac now suffers from multiple-personality syndrome, but Apple claims it signifies a "more open approach to attracting new users to the platform." The logo will appear on software products and product literature from Apple and other companies. And it will light up computer monitors every time you turn on an Apple computer – or a clone from another company.

"We have no products that are called Macintosh." Apple doesn't make Macintoshes anymore? Apparently not.

The real message is that the computers Apple now makes are not really Macintoshes, just one member of a family that happens to share the same operating system. "With our Mac OS logo, the name 'Mac OS' will refer to the operating system not only sold by Apple but by others," Strickland told me. Then he said something that almost made me drop the phone: "We have no products that are called Macintosh." Apple doesn't make Macintoshes anymore? Apparently not.

"We have Quadras, PowerBooks, Performas. Legacy-wise the name is important, but not officially. Over time, the Macintosh name will be less important."

Barbarians after Gates

Somehow this is not encouraging. How should we react to the news that Apple has developed a logo that software developers can stick on a box to demonstrate compatibility with the Mac OS? Hasn't the idea all along been that Macintosh software works with Macintoshes?

Oh, I forgot. There are no more Macintoshes – just computers that run the Mac OS, some of which will be made by Apple. And the others? Don Strickland says that in the first round of the licensing, Apple may focus on manufacturers intending to bring the Mac OS to markets that Apple, due to its limited resources, simply hasn't been able to address – publishing markets in certain foreign countries, for instance. But eventually Apple will not shirk at licensing the Mac OS to companies that may compete directly with Apple. Even at lower prices. "If you sell it for half as much as Apple does," says Strickland, "that's fine." Really?

Other companies (maybe even IBM) might try to combine the Mac OS with some new twists. Imagine a box like the Power Mac that runs native software and a built-in emulation mode – of Windows software. Apple claims to welcome any of these innovations.

But what about Apple's own innovations? Innovation is the very heart of Apple's mission – the impetus that created the operating system in the first place. Apple is currently constructing a number of new operating systems, some of them presumably loaded with the sorts of things that Apple hopes will catapult the company back into its position as technology leader. Will these innovations be instantly available to the clone makers of the current Macintosh OS?

Don Strickland admitted that Apple doesn't have the answer to that question. Neither did he have anything to say about the possibility that Apple's new operating systems not shared with clone makers might lead to a new era of confusion, as customers try to sort out which Apple-flavoured operating system supports which feature. There are questions concerning limitations that Apple might place upon itself when considering new innovations – would an installed base of non-Apple clones act as an impediment to future greatness? The beauty of a closely held system was that Apple had the freedom to implement even those changes that required hardware adjustments. What happens when a significant percentage of its user base buys from other manufacturers?

Despite these unresolved questions, the company is plunging into the clone zone, holding an ivory king in its open hand. "We're going to be competitive with Microsoft, whatever it takes," promises Strickland.

That's where it's all headed, of course. Apple wants to be Microsoft. Making Macintoshes doesn't seem to interest Apple any more. (If it did, perhaps Apple would try to increase market share by doing whatever it takes to meet customer demand for its current products.) "Creating a separate identity for Apple is a shot across Windows' bow," said Guerrino De Luca, vice president of marketing in the AppleSoft Division, in an Apple press release, neatly illustrating the company's delusions.

I still think that Apple is capable of the sort of innovation that can, if well marketed and competitively priced, increase its share of the world market – without Mac clones. But if it tries to compete directly with Microsoft, whose bread and butter is licensing operating systems, Apple will lose. The tens of millions of people already wed to the Microsoft world have been well trained to expect innovation in limited doses, preferably with full DOS compatibility. Inertia, not innovation, is the name of that game. In addition, the leaders of Apple are no match for those who run Microsoft – to think that Apple can come from behind and eclipse Gates and company is folly of the first order. Apple's first instinct was right. Protect the king. I look at the clonal happy-Mac logo for the new, not-made-by-Apple future, and can't help but ask: Why is this face smiling? **MW**

Steven Levy's latest book is *Insanely Great: The Life and Times of Macintosh, the Computer That Changed Everything* (Viking, 1994). He is a Fellow of the Freedom Forum Media Studies Center in New York.

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MAC & PC

Cross-platform integrated software – the simple truth.

By William Gallagher

Distinguished docs

Sticking with multi-power

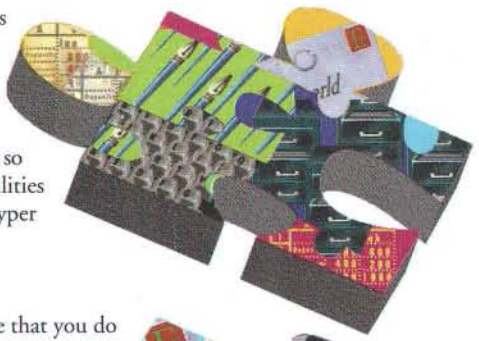
If you want to lose all your careful formatting, use a word processor across two platforms. If you want to lose money, use a spreadsheet and don't check each cell afterwards. And if you want to pile on the agony, to maximize the problems, and be certain of getting far more trouble than it could ever be worth, use an integrated package and get the worst of all problems.

Not true. It varies greatly, but despite integrated packages being typically a word processor, spreadsheet and database built into one, you do not spend your working days creating one type of file for documents, one for accounts and so on. Instead, the integrated package has one type of file and if it distinguishes between a spreadsheet and a word processor document at all, it does so once you've opened the file.

Instead of being the most complex cross-platform application to work with because of the multiplicity of data types each can produce, integrated packages are easy as long as you are only exchanging files with other integrated packages.

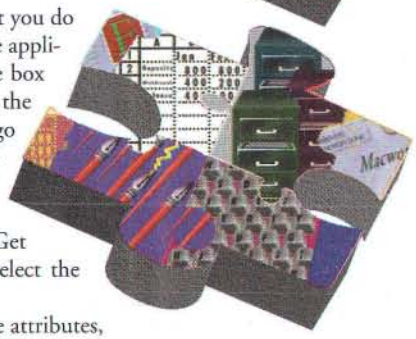
Normally that is just what you would be doing because the safest approach to cross-platform work is to use the same applications on both platforms. They won't be the same application *per se*, but Microsoft Works for Macintosh should be like Microsoft Works for Windows, for instance. This is generally true, but there have been some problems. If you're using ClarisWorks 1, for instance, you should upgrade to a later version when you can, and if you're on a version less than 1.0v4 then you have to either upgrade or prepare yourself mentally for the task of manually altering each of your files.

What you have to alter is the identification string of the file: the creator name and file type that the Macintosh needs all files to have. This is simple to do in WordPerfect where you just choose Open and then, in the dialogue box that appears, choose the File menu and Info option; as well as details of the file sizes and creation dates, you'll get a section called attributes and two editable fields for the creator and file type. Still, if you had WordPerfect you wouldn't be likely to be using ClarisWorks' word processor, so you may have to resort to program utilities such as ResEdit, or the shareware FileTyper and FixCreator Pro.



Alter pieces

If you're going to use ResEdit, make sure that you do not open any files with it. When you start the application, click to clear the ResEdit jack in the box and then immediately choose cancel from the Open dialogue that appears. You could go through this process by opening files and then altering them, but you don't need to and with ResEdit it is better not to try things you don't have to do. Instead, choose Get File/Folder Info from the File menu and select the document you need to alter.

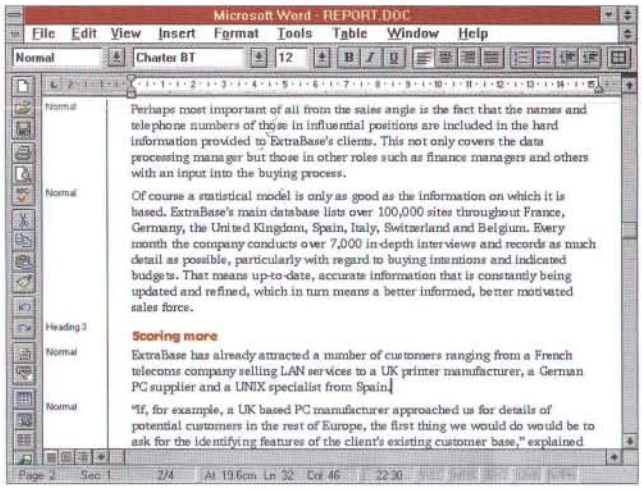


In any application that lets you alter these attributes, change the creator type to BOBO and the type to CWWP for a word-processor document, CWSS for spreadsheet, CWDB for database or CWDR for drawing or graphics. Save the document's information and you've converted the file. Expect to get problems with fonts when you do this. There's nothing you can do to fix that, apart from upgrading. And when you upgrade, make sure everyone does: don't keep a mixture of versions. ClarisWorks 2.0 and 3.0 will open any file created by version 1 of the Windows or Mac applications without any of this editing of the creator types. Oddly, you can still get a font problem so if your two platforms are in different offices, fax sample pages around to catch any font changes.

continues page 110

ILLUSTRATION: MARINNA ANDERSON
Created in Adobe Photoshop using a Power Mac 7100

Moving Words
Microsoft Word on Mac and Windows includes filters for a large number of text-based applications including those on the other platform.



MAC & PC

Version 1 of ClarisWorks can't recognise files created by the later versions, and unlike any other form of application, there is no option to "Save As ClarisWorks 1.0" in the currently shipping releases. Instead, you do have to save the documents as individually-formatted files, that is to say saving a word-processor document in one form (Claris recommends RTF, the Rich Text Format) and a spreadsheet in another (SYLK). Similarly, databases have to be saved as DIF or TEXT, and graphics have to become EPSF or PICT files. The most common amalgamated file is likely to be the word processor that has spreadsheet tables in and there you will not find a direct conversion: your safest approach is to separate out the spreadsheets and text and send them as separate files.

Much the same applies to when you are using Microsoft Works on both platforms, but here the most awkward problem is the one of the same date that some users of Microsoft Excel have found. When you enter a date into a Works spreadsheet cell, or any database field defined as a date one, the figure or text you type is translated into an internal serial number. You see the date in whichever format you've specified, but for calculations and storage Microsoft Works records it as a number of days. This is common on all computer systems, with some minicomputer ones running programs written in the Pick language allegedly calculating dates as the number of days since Dick Pick was born. With Windows, the start date is the more reasonable January 1, 1900 and with Macintosh the almost as sensible January 1, 1904.

If you are running Microsoft Works 3.0 for Macintosh you can swap files with users of the Works for Windows versions 2.0 and 3.0 without difficulty. You can't do this with Macintosh Works 4.0a though. You'll have to first save it as a Mac Works 3.0 document and then convert it to Windows format.

Microsoft Works 4.0a does give you other alternative formats for saving – more than in ClarisWorks unless you invest in extra translation filters. The default Open dialogue in MS Works, like most Microsoft applications, only shows you folders and those documents that are saved in the program's native format. But you can choose to show "All Available" or specifically one of more than twenty formats including AppleWorks 2.0, 3.0 and GS; all varieties of MS Works since version 2.0 on any platform, and stand-alone applications like Excel, WordPerfect 5.1 and Lotus 1-2-3. It's a very comprehensive list, but just fails to squeeze in either WordPerfect Works or the market-leading ClarisWorks.

Microsoft Works has the advantage of coming from a company selling a heavyweight word processor that exists on both platforms: Microsoft's Word is available for Windows and Mac, but Claris' MacWrite Pro is only on the Mac. WordPerfect Works has a similar advantage because it has both LetterPerfect and WordPerfect on both platforms as well. Curiously, you can expect that the integrated Works package from either manufacturer will open the files of that company's word processor – but not vice versa. Microsoft Works 4.0a for Macintosh will open Word 6 files from either Windows or Mac, and WordPerfect Works will open WordPerfect 5.x files from Windows and 2.x from Macintosh; this isn't the latest version of either, but can be opened by them. Neither Microsoft or WordPerfect Works will write in the format of the counterpart word processors, and neither word processor will open the Works file format.

Spaced oddity

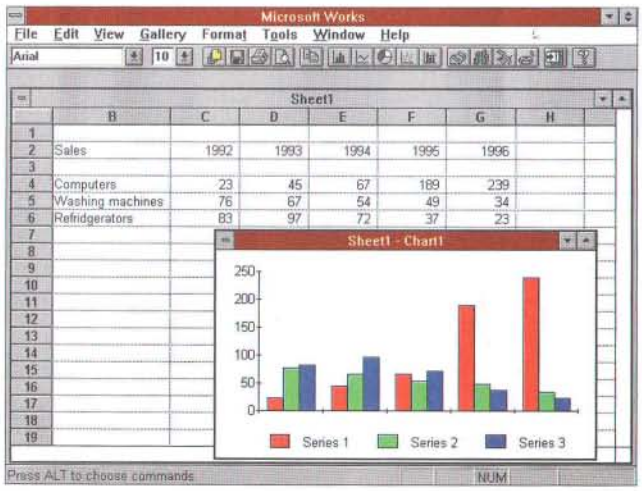
This oddity may mean that going for one of these two Works packages is not the obvious idea it might seem. ClarisWorks, for instance, has the advantage that it can read and write both Word 6 and WordPerfect 6 for Windows/WP 3.1 for Macintosh. Neither of those word processors will read or write the files of the other, at least not at the time of writing. WordPerfect 6.1 for Windows is expected to be able to import Word 6 files, although not export them, when it ships at the turn of the year. If you have ClarisWorks, you could find yourself the centre of attraction in a multiple platform office. And since ClarisWorks' translators for these packages are implemented as part of the Claris XTND technology (the widely-supported conversion filter standard) there is only the law and your conscience stopping you from using those same filters from within Word 6 or WordPerfect 3.1 for Macintosh.

The odds are that most times you send documents from integrated packages they will be going to stand-alone applications like these two: if only because the market share for integrated packages is much smaller than that for either traditional software or for the suites like Microsoft Office. This is almost a problem.

The advantage of integrated packages is that you can mix and match document types and perhaps with one as smoothly interrelated as ClarisWorks you can forget entirely about what format you're working in. When that happens, you will have trouble sending the document to another platform or another application. The receiving application has to have the same degree of understanding of different types of document, and aside from other integrated packages, there aren't any that do.

If you want to save agony, minimize problems and be at least reasonably certain of getting somewhere without too much trouble, stick to integrated packages. **MW**

Full Works
Microsoft Works 4 for Windows is very similar to Microsoft Works 4 for the Mac – and both will open Word 6 files from either platform



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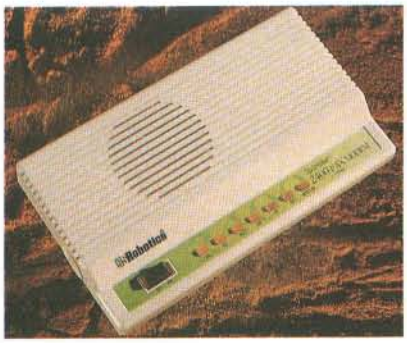

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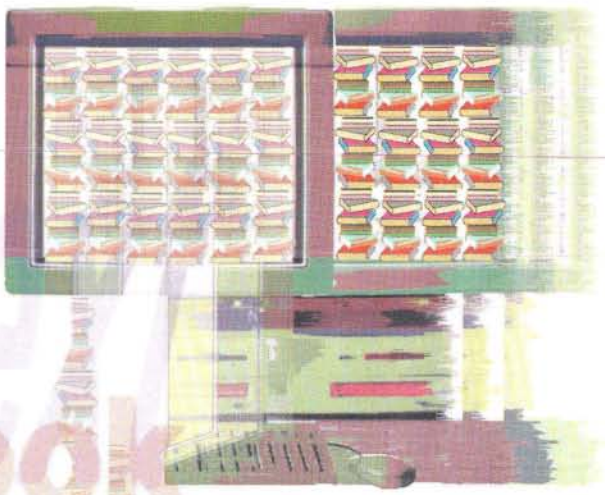
One man's mission to digitize the world's literature.

By Sue Schofield



Most etext-ellent

Read up! Project Gutenberg

Where were you in 1971? This scribbler was sitting forlornly on a beach in France, wondering how long it took to hitchhikers to die of starvation on a diet of stolen corn-cobs. The only other major events of that year were Switzerland giving women the vote and Tricky Dicky giving Vietnam the benefits of USA research into dioxins.

While Richard Milhous Nixon was on the throne as it were, another American called Michael Hart was also enthroned. Hart was then newly seated before a mainframe computer at the University of Illinois. He had decided within a few hours getting his hands on the terminal that he wanted to do something useful with the several million dollars of taxpayers kit at his disposal and instead of inventing Doom, or MS-DOS Hart turned his hand to something useful.

The result is widely known today as the Project Gutenberg. It's a visionary project that modestly hopes to put at least 10,000 of the world's most read books into the on-line networks of the world.

It's called Project Gutenberg, because Johannnes Gutenberg, as any fool with a copy of Grolier's CD encyclopedia knows, was a German goldsmith who is credited with the invention of printing from movable type, around 1450 AD. In China and Korea, where they knew little of Germans, the wily Occidentals had got the hang of printing with metal type by the eleventh century AD, but that didn't stop Gutenberg from re-inventing it, and the trick ink he needed for printing with metal type.

Alas, Gutenberg ignored the advice 'Never a borrower or lender be', because he pre-dated Shakespeare by a hundred years and hadn't heard the quote from Hamlet. Consequently Gutenberg's commercial press floundered when he couldn't repay the mortgage on the business. The Gutenberg Bible was produced, not by Gutenberg, but by Gutenberg's mortgage provider, Johann Fust.

But Gutenberg is credited with having all of the good ideas, which is why he's immortalised in the 21st Century project which bears his name.

Back in the future, Project Gutenberg is working well. It publishes new dollops of etexts (electronic texts) by the month from its home in the bowels of the ftp site at mrcnext.cso.uiuc.edu in Illinois, and supports readers through a Usenet group and a list server. The project works mainly thorough volunteers sending in scanned texts of their favourite books, and by workers on the project at Illinois. Each electronic text takes about fifty hours or more to scan, edit, and proof read.

Project Gutenberg's aims look like science fiction at first sight. Hart hopes to give away a trillion electronic texts by the year 2001, just seven years in the future. This equates to ten thousand etexts collected by a hundred million readers, which is Hart's estimate of the number of users of personal computers by that date. While these figures don't bear current examination (how long will it take you to download ten thousand book length texts at 14,400 bits per second?) this may not be the case in the future.

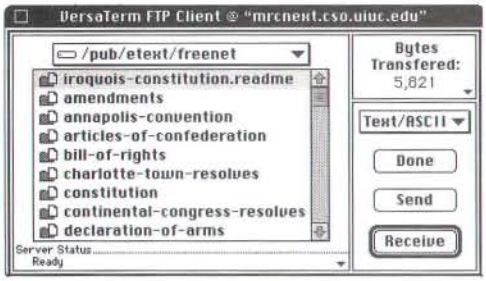
Improvements in storage media technology should make it possible to store those ten thousand books on a single optical disk or sliver of bio-tech at a price anyone in employment can afford – although quite what will constitute employment in the year 2001 is anyone's

continues page 114

ILLUSTRATION: GERARD LOCKE
Created in Adobe Photoshop using a Quadra 650 16\1000

guess, especially with a hundred million PC owners cluttering up the planet.

But back to the plot. You can dip a tentative finger into Project Gutenberg by using your e-mail facility to get mail from listserv@vmd.cso.uiuc.edu. Send 'sub gutnberg Fred Smith' in the body of the message (if Fred Smith is your name), and spell 'gutenberg' as 'Gutnberg' to the server. There's also a heavily stacked ftp site at mrcnext.cso.uiuc.edu which has zillions of free books on it, and an Info-Mac mirror. If you can want to help out you can contribute directly to the Project either by offering practical or financial help. Details are on the server.



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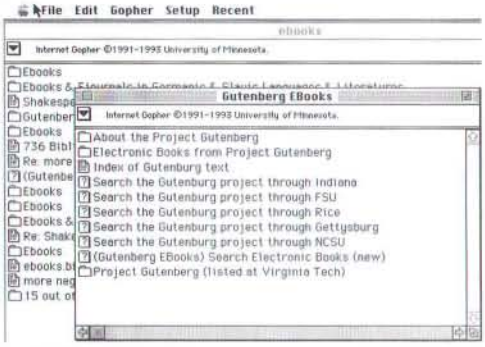
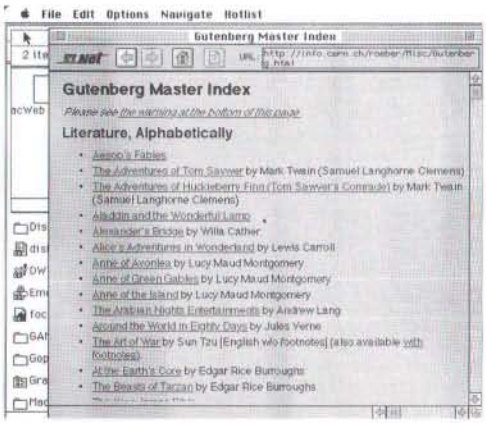


Or Gopher it. Gutenberg is everywhere if you can find a Gopher server which isn't busy.



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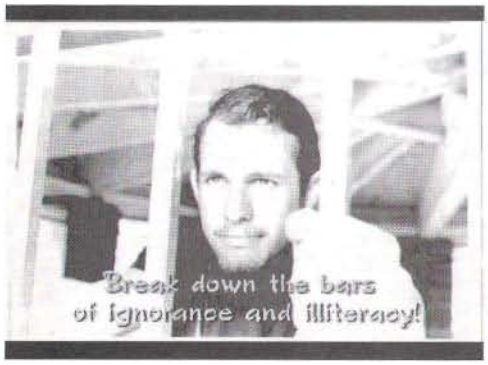

Have you seen this man? Professor Mike Hart of Project Gutenberg behind bars. Did he avoid paying VAT on Gutenberg CD's?

It's free but is it legal?

The ability of Project Gutenberg to produce electronically transferrable texts relies on the availability of those texts for publishing. In simple terms this means that the works have to be out of copyright, or that Project Gutenberg is offered a licence to distribute the texts by the Author or Publisher. Generally speaking, works in which copyright is claimed (this feature for instance) are automatically assigned copyright for a period of fifty years.

After that copyright lapses and the work can be re-published by anyone. But that's the simplistic view. Copyright can be maintained by a Publisher wishing to re-assert it, and Project Gutenberg ran into problems with copyright during its gestation period. The two offending works were an edition of the Bible, and some works of Shakespeare. Project Gutenberg got around the problem simply by not publishing those editions, and now has a number of staff checking out copyright problems, before any work is undertaken converting work to etexts.

In Europe copyright matters were recently shaken up by 'The Directive on Harmonisation of the Term of Protection of Copyright and Certain Related Issues' (don'cha just lurve EuroSpeak?). The Directive affects any work of literary, dramatic, musical or artistic work from the first of July 1995 and grants authors ownership of copyright for seventy years after the end of the year in which said Author died. For work currently in copyright the copyright period is extended for another twenty years after the end of the original fifty. (The USA has a similar ruling.) In some ways this is going to put Project Gutenberg back a little, and it might even affect The Great Plan of having ten thousand etexts on the networks by 2001, especially if a number of those works were by an author who inconveniently died fifty one years ago.

In my view, and presumably that of Project Gutenberg, allocating copyright for seventy years after the death of an author is going a bit far. For many people today copyright serves only to limit the free distribution of material long after a book or a play or a film has provided the Author and Publisher with a living, decent or otherwise. And after having signed a couple of those thirty page Publishers Agreements in an otherwise small lifetime, it occurs to me that the more restrictions placed on knowledge, the less likely it is to benefit anyone.

But will protecting the financial and moral stances of authors and publishers be of any value in the brave new electronic world? The nets are already abuzz with new authors doing what used to be deprecatingly called 'self-publishing'. And most of them are getting along just fine and dandy without 30-page agreements, or poison pen letters written about books by lawyers. Already it's possible to grab work on a great variety of topics written by the denizens of the electronic culture, and for many people this new work is replacing the classics we Old People were force-fed at school.

Is Project Gutenberg therefore in danger of becoming the Suppository of All Knowledge, or is it already the Last Bastion of Literature As We Knew It. Mail Mike Hart at hart@vmd.cso.uiuc.edu for an answer.

Buying in bulk

A lot of Project Gutenberg etexts are available on CD's from various suppliers. Unfortunately many of the CD's are padded out with the same etexts on disk in both raw ASCII and in PC-Zipped form. The Zip files are there presumably for the benefit of bulletin board operators still trying to cater for the needs of ancient 300-baud modems which lack data compression. So look out for Mac-only versions of CDs to avoid the PC Zip-Monster, which gobbles up your expensive disk space. In the UK try UNICA's DeskTop Bookshop CD, which carries several hundred texts in ISO 9660 format (plus Zips) for less than £20 and is widely available. Look out too for Kimtech's CD rom catalogue which often carries a lot of interest to Mac users.

If you are prepared to risk spending money over the Internet by mailing your credit-card details there are two companies that will send you etext disks via USA letter post and the magic of your Barclaycard. The technique of using US Letter Post does not yet seem to attract the sticky paws of Her Majesties Customs and Excise VAT police, but I know at least one Customs Officer who reads *Macworld*, so this month's column will blow the scam.

The evasion of Vat and Import Duty is an activity which cannot be condoned by this writer, who does not in the least suggest that you mail joe@config.com in Ohio for a price list and an ASCII CD catalogue. Evasion of VAT is an offence which could put you in the nick for a long time. But if you took your PowerBook and a Gutenberg CD at least you'd have something to read during the 20-year sentence.

CDs of Gutenberg etexts can be somewhat overpriced in the UK . In the States the Walnut Creek company sell the latest versions of Gutenberg CDs for about $40, plus $10 shipping and handling to the UK. (Don't forget to add VAT and Import Duty.) The UK Post Office, bless their little red vans, recently charged me a mere £1.40 for the privilege of handling VAT and Duty on a package from the US while Federal Express charged me 310 (plus VAT) for the same service. So if you do order CDs or anything else for that matter from the US, make sure you know what you are paying for. Ten quid, plus VAT is a lot to pay on top of a CD costing $20 at source. **MW**

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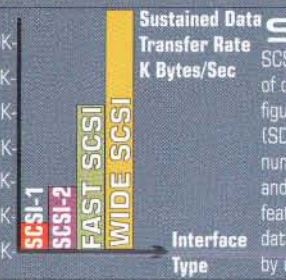

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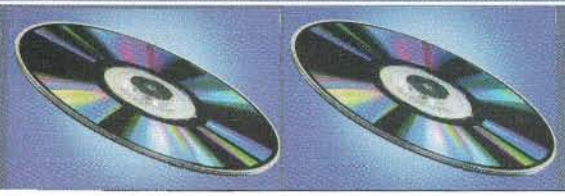

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HANDS ON

Managing the Mac can yield tremendous productivity gains – and most of the tools are either built in, or free.

By Jim Heid

Finder's keepers

Power tips and shortcuts in the Finder

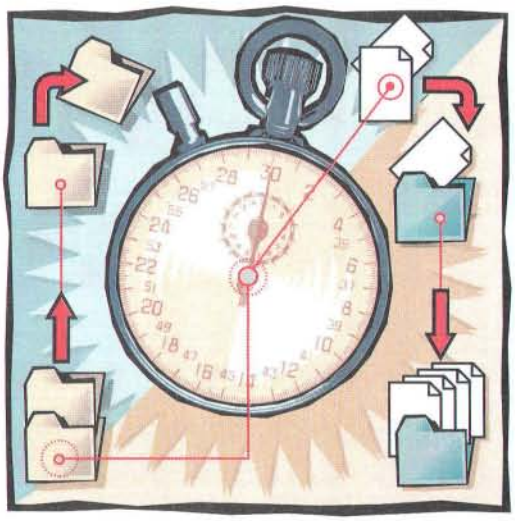


ILLUSTRATION: ROB DUDLEY

Macros, wizards, templates, toolbars, AutoThis, PowerThat – developers are loading applications with features that make computing more productive and more efficient. But what about time spent outside applications, in the Mac's Finder? Tracking thousands of files, navigating folders, mounting file servers, tweaking system settings – chores like these can really eat into your time, turning your Mac from productivity booster to ball and chain. What's a knowledge worker to do?

The Macintosh system software provides numerous features that streamline Finder grunt work; and a variety of utilities, some free or shareware, can also help. This month's column provides answers to Finder productivity issues. And modem owners, take note: I've posted the free and shareware utilities discussed here in *Macworld's* eWorld forums.

Problem: Locating files buried deep in folders.
Solution: Aliases and a hierarchical Apple-menu utility.
Categorizing your files with plenty of folders – for business software, graphics software, games, memos, spreadsheets, business plans, novels – is by far the best way to keep your hard drive organized. But when you start tucking folders within folders within folders, finding a file can send you on an odyssey of double-clicking. One answer: the alias. Select a frequently used application or document buried within a folder, choose Make Alias from the Finder's File menu, and drag the alias out to the desktop. Next time you need the file, you can open it by clicking on its alias; the original remains filed where you want it. Or better yet, stash the alias in the Apple Menu Items folder in the System Folder and it'll appear on the Apple menu.

You can also dramatically increase the Apple menu's usefulness with a hierarchical Apple-menu utility, such as Alsoft's MenuExtend (included with Alsoft Power Utilities) or Kerry Clendinning's shareware utility MenuChoice 2.0; these utilities turn folders and aliases of folders into submenus, allowing express access to even the most deeply nested files (see "Efficiency experts"). Apple liked the concept so much that it includes a hierarchical Apple menu in System 7.5.

Problem: Logging on to a file server.
Solution: Create a file-server alias.
If you use a network file server or System 7's file sharing, you know the tedious steps required to mount a remote volume: open the Chooser, click on the AppleShare icon, select a file server, type a password, choose the volumes you want…

The amazing alias can help here. Make an alias of any server you use frequently, and you'll be able to mount the server just by double-clicking on its alias. If you specify a password – which, in these times of file sharing and Apple Remote Access, you'd better – the mounting procedure will pause while you enter the password.

And here's a cool way to access a server volume or folder, or even your own shared hard drive, from anywhere on the network: make an alias of it on a floppy disk, and when you need to log on, sit down at any Mac on the network, insert the floppy, and double-click on the alias. (Now aren't you glad you gave your own drive a password?)

Problem: Turning file sharing on/off.
Solution: Use simple macros.
System 7's file sharing is great for beaming data between Macs. But you don't want to leave it on when you don't need to share files, because it slows down your Mac, and toggling via the Sharing Setup control panel is too much work. CE Software's QuicKeys 3.0 includes an extension called System 7 Specials that can turn file sharing on and off with one keystroke. A similar QuicKeys extension, Choosy, lets you bypass the Chooser when switching between printers.

In the freeware/shareware arena, there's Steve Forgacs's free FileSharingToggle 1.0.4, a simple program that toggles file sharing. And no frequent filer should be with-

continues page 118

HANDS ON

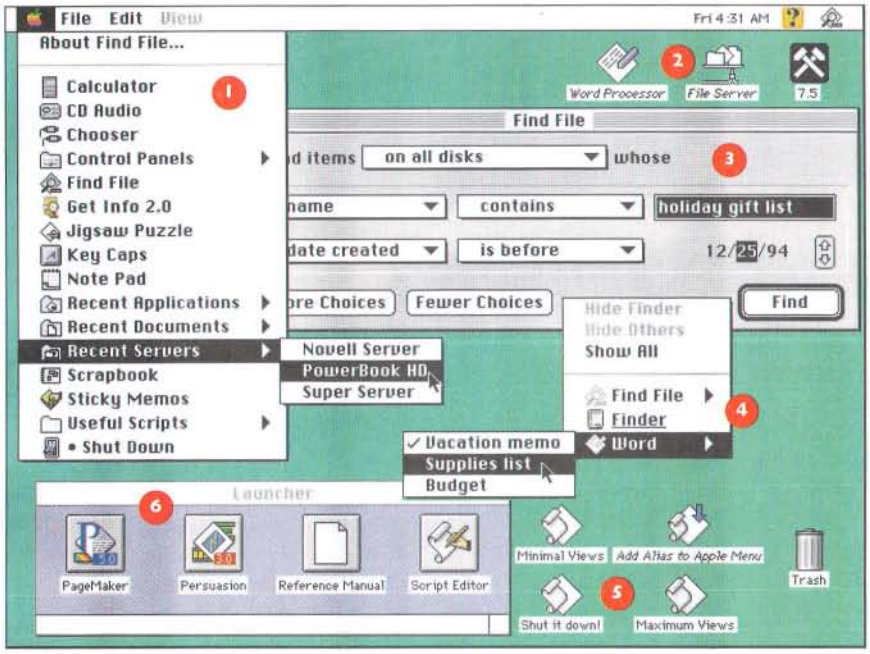
out Robert Hess's shareware Shaman 1.1.0, which can toggle file sharing; display an icon in the menu bar to indicate when sharing is on; and, if you have Apple's PlainTalk Speech Manager extension, even tell you aloud when someone logs on or off.

Problem: Switching monitor-depth settings.
Solution: Use utilities that can switch depths for you.
All colour Macs support a variety of monitor settings ranging from black and white (1 bit), to 16 colours (4 bits), 256 colours (8 bits), thousands of colours (16 bits), or even millions of colours (24 bits). When not working in colour, you can increase your Mac's performance on certain tasks by setting it to black and white – for example, your word processor will scroll much faster in black and white than in colour. But then you'll want to switch back to colour for movies, graphics, or playing Myst.

QuicKeys' Screen Ease extension provides keyboard shortcuts for depth switching. You can choose a specific depth, such as 256 colours, or set Screen Ease to increase or decrease the depth each time you type a command.

Another handy depth switcher is Ambrosia Software's shareware ColorSwitch 2.3.0, which adds a menu to the right edge of the menu bar, listing available bit depths.

Efficiency experts
This composite illustration shows six ways to make your computing time more efficient.
(1) A hierarchical Apple menu (System 7.5's is shown here).
(2) Aliases of often-used items on the desktop.
(3) The System 7.5 Find File desk accessory.
(4) A hierarchical Application menu, created by the free ApplWindows utility.
(5) A variety of scripts for switching monitor settings and controlling file sharing.
(6) The System 7.5 Launcher.



(You can also specify that the menu appear under the mouse pointer when you type a command – convenient for large-screen monitors.) ColorSwitch also lets you change the Mac's speaker volume without going through the Sound control panel (QuicKeys provides a similar feature).

Then there is the shareware file-launching utility Apollo 1.0, which lets you create an always-available menu of your favourite applications and often-used documents, and can also switch automatically to a specified bit depth when you start a particular program. Depth switching doesn't get any easier.

Problem: Opening folders is sl-o-o-w.
Solution: Change the way the Finder shows windows.
Using the Finder's list views instead of iconic views makes the Finder run faster; in an iconic view, the Finder has to retrieve from its internal database the icon for every file in every window you open and then display those icons. The Finder's list views – Name, Kind, Size, and Date under the View menu – don't impose this overhead. But list views often contain information you don't need – do you really need the creation date for every file? – and that slows down the Finder as well. Use the Views control panel to pare down what information appears (and don't forget to turn off Calculate Folder Sizes, which constantly totals up the size of all the files in a folder).

Note that removing list-view items means you won't be able to sort by those attributes – for example, if you uncheck Size, you won't be able to sort windows by file size.

Problem: Desktop clutter.
Solution: Use application-hiding features or utilities.
A great enhancement to the Application menu is Hiro Yamamoto's ApplWindows 2.0.2, a free control panel that displays all open documents for each application in the Application menu so that you can switch to a particular document as you switch applications. ApplWindows can also display its hierarchical Application menu on command at the mouse pointer's location.

And do you still long for System 6's MultiFinder, which let you cycle through open programs by clicking on the Applications icon instead of pulling down a menu? ApplWindows supports that, too.

QuicKeys' ProcessSwap extension also provides an automatic hiding feature. And there's Jeff Winkler's Hide Others 1.0 freeware, a control panel that hides inactive applications when you press a key that you designate.

None of these goodies can really eliminate the clutter that builds up within applications. For that, there's Rob Johnston's free WindowShade 1.2 control panel, which can "roll up" a window – that is, hide everything except the title bar of open documents.

AppleScript: Automated Efficiency

System 7.5 provides many of the efficiency features that required add-on utilities under System 7.0: a hierarchical Apple menu (it even lists recently opened documents, applications, and file servers); an automatic application-hiding feature; and a copy of WindowShade. But from an efficiency standpoint, the most exciting thing about System 7.5 is that its Finder supports Apple's wide-ranging automation language, AppleScript. AppleScript has been around for a couple of years now, but support for it has been conspicuously absent from the Mac's Finder.

The System 7.5 Finder is not only scriptable, it's recordable, which means you don't have to learn the AppleScript language. You can create scripts by recording the actions you want to automate as you perform them. As you choose commands, you'll see the script appear in the Script Editor window. After tweaking the script, save it as an application and stash it in the Apple menu. (I have posted a collection of useful sample scripts on the *Macworld* forums on eWorld.)

A big frustration is the nearly total lack of documentation on Finder scripting. The Apple Extras folder contains some AppleScript documentation but nothing about System 7.5's Finder. To whet your appetite, open the Finder's dictionary using Script Editor's Open Dictionary command. (In AppleScript-speak, a dictionary is the set of terms – commands, objects, and so on – that a scriptable application provides.) There are no examples of how to use the terms, which run to nine single-spaced pages, but you'll understand what many of them are for just by their names.

For now, the best way to learn Finder scripting is to dismantle existing scripts and to practice creating your own. You can also read Derrick Schneider's great primer, *The Tao of AppleScript* (Hayden Books, 1993).

System 7.5 provides some efficiency features I haven't mentioned. Whether you switch to 7.5 or stay with 7.0, learn these techniques; you'll reduce the time you spend in the Finder and save more time for doing your work – or for doing something even better. MW

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6100 8/250	1286	1440	1741	2465	2365
8/350	1346	1500	1800	2525	2425
8/530	1400	1560	1860	2585	2485
8/730	1460	1620	1920	2645	2545
8/1 GB	1600	1760	2070	2745	2645
8/250/CD	1417	1579	1872	2596	2496
8/350/CD	1485	1650	1940	2666	2566
8/530/CD	1550	1715	2005	2730	2630
8/730/CD	1599	1775	2065	2790	2690
8/1 GB/CD	1735	1915	2215	2940	2840
	7100 AV	**ADD 119**			
7100 8/350	1826	1969	2200	2927	2799
8/530	1926	2069	2350	3077	2947
8/730	2025	2169	2499	3225	3099
8/1 GB	2150	2299	2650	3375	3245
8/1.7 GB	2350	2499	2850	3575	3445
8/350/CD	2013	2169	2389	3118	2955
8/500/CD	2063	2299	2439	3163	2999
8/730/CD	2199	2499	2649	3363	3199
8/1 GB/CD	2360	2715	2864	3578	3399
8/1.7 GB/CD	2560	2915	3064	3778	3599
	8100 AV	**ADD 119**			
8100 8/500	2992	3199	3368	4093	3993
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500	11.20	1279	1410	1499	1750
730	12.10	1379	1510	1599	1799
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Drive	Lease/pw	8Mb	8MbCD	16MbCD	40MbCD
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PowerMac 8100/8110

8100	Lease/pw	16MbCD	24MbCD	40MbCD	72MbCD
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730	26.70	3100	3350	3675	4469
1.0GB*	28.00	3199	3435	3775	4569
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	160	16.30	1842	1990	2129	2394	
	250	17.50	1989	2199	2275	2620	
540C	**320**	26.30	3012	3162	3299	3564	540C
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RADIUS PHOTOENGINE ACCELERATOR	PHOTOSHOP 3
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Q&A

QUESTIONS & ANSWERS

Custom floppy icons • System 7.5 sizes

PowerBook trackpads • Smarter ClarisWorks charts

Custom StyleWriter paper sizes

Custom Floppy Icons

Q I would like to know how to modify the icon resources in my System file so that any disk inserted into the floppy drive has a cool custom icon rather than the boring black-and-white icon that comes with the system. I used ResEdit to customize most of the regular icons (folder, Trash, alert and so on), but my changes to the floppy icon don't have any effect. I would rather not use the system extension Cfloppy, which modifies the floppy disk icon, because my system takes up far too much RAM as it is.

Todd Nguyen

A Have you tried the free system extension Discolour by Andrew Welch (available from user groups and the Macworld forum on eWorld)? It gives all floppies a colourful, three-dimensional look and only increases system software memory size by 1K. You can't edit the floppy disk icons with ResEdit because the system software uses icons from the Mac's ROM.

System 7.5 Size

Q How in the world can System 7.5 take up so much RAM? Why does the memory demand for 7.5 grow from 8MB or so on 680x0 Macs to a whopping 16MB on Power Macs? I consider 16MB barely adequate on my 660AV; if I upgrade to a Power Mac 6100, how much more RAM would I need merely to maintain current capability?

Lane Millet

A The amount of RAM and disk space that System 7.5 requires depends on which parts of it you install, as shown in the accompanying table. If you install the System 7.5 core module using the Installer's Easy Install option, you may get features you don't need. You can use the Installer's Custom Install option to select just the ones you need, or you can use the Easy Install option and then use the Custom Remove option to remove those you don't need.

The System 7.5 core module uses 700K to 1MB more RAM and about 8.4MB more disk space than System 7.1. The PowerTalk and QuickDraw GX modules together use an additional 1.4MB to 2.2MB of RAM and 7.1MB to 8.6MB of disk space but are entirely optional (unless you use software that requires them).

PowerPC programs – including native Power Mac portions of System 7.5 and native Power Mac applications – contain more instructions and therefore take more RAM and disk space than equivalent 680X0 programs. PowerPC programs have more instructions because each instruction does less than similar 680X0 instructions. Like all RISC (reduced instruction set computer) processors, the PowerPC can execute its simple instructions much faster than a CISC (complex instruction set computer) processor such as a 68040. Thus a PowerPC program's larger size is a by-product of its faster performance.

The amount of additional RAM and disk space you need for native Power Mac software varies from program to program. You might get away with no increase in memory, but more likely you'll want 50 to 100 percent more. Since you use 16MB on a 660AV, I recommend 40MB on a 6100 if you can possibly afford it.

While 24MB may be enough for the moment, you're likely to want more memory in the future, at which point you'll have to dump the two 8MB SIMMs to install two 16MBs. (You must install a pair of same-size, same-speed SIMMs in a Power Mac 6100's two memory-expansion slots. Similarly, you must install SIMM pairs in a 7100's four slots or an 8100's eight slots. All of today's Power Macs come with 8MB of RAM soldered to the system board.)

System 7.5 and RAM Usage

	PowerPC 6100/60AV	680X0
Easy Install RAM Sizes		
System 7.5	3472K	2530K
PowerTalk	352K	585K
QuickDraw GX	982K	1678K
PowerTalk and QuickDraw GX	1456K	2248K
Easy Install Disk Sizes		
System 7.5	15.1MB	13.8MB
PowerTalk	2.4MB	2.4MB
QuickDraw GX	6.2MB	4.7MB
PowerTalk and QuickDraw GX	8.6MB	7.1MB
Major RAM Users		
Apple Menu Options	325K	42K
Macintosh Easy Open	296K	36K
QuickTime	262K	41K
Finder Scripting extension	177K	185K
CD-ROM software	87K	150K
PowerPC Finder Update	46K	not installed
AppleScript	42K	50K
WorldScript Power Adapter	40K	not installed
Major Disk Users		
Apple Guide and guide files	2628K	2220K
System	2559K	2559K
Control panels (Easy Install set)	1470K	1470K
Printer drivers except LaserWriter 8	1320K	1320K
Primary fonts and Palatino	1218K	1218K
LaserWriter 8	1140K	1140K
QuickTime	1709K	1063K
Apple Menu Items	751K	751K
AppleScript	706K	706K
Finder	451K	451K
Networking software	392K	392K
PC Exchange	366K	366K
CD-ROM software	308K	308K

To see how much RAM and disk space are used individually by System 7.5, PowerTalk and QuickDraw GX, I measured the sizes just after installation and start-up on a Mac IIfx (with 20MB of RAM, virtual memory off and a 500MB disk) and on a Power Mac 6100/60AV (40MB of RAM, virtual memory on and set at 60MB, and a 500MB disk).

Your savings may not exactly match those listed here. System RAM usage depends on the amount of installed RAM and on the mix of installed extensions and control panels. Moreover, unless virtual memory is on, you save very little RAM on a Power Mac by removing extensions. Disk space varies slightly depending on the capacity of the start-up disk.

Trackpad Cornering

TIP: The trackpad on the PowerBook 500 is wonderful, but I find it difficult to get to a corner quickly (to use the Apple menu or switch to another open application, for example). You can fool the trackpad into

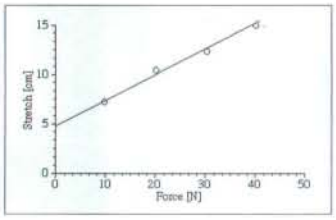
continues page 122

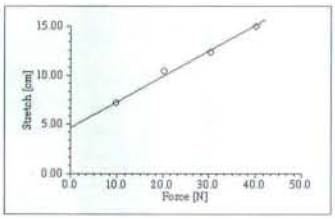
quickly moving the pointer to a corner of the screen. Simply move your thumb or index finger a short distance in the direction of the corner you seek, and then tap the pad with the next finger, an inch or so from where your first finger was moving. The trackpad thinks one finger covered the distance between the fingers instantaneously, and it jumps the pointer directly to the corner.

Matt Taylor

Formatting Tick-Marks

TIP: After completing an experiment and tabulating the data, you turn to your Mac and ask ClarisWorks to graph it. Ah, but a problem arises! Although you measured the data precisely (to one and two decimal places), you don't want to clutter the chart axes with tick-mark labels that have decimal points with zeros after them. Unfortunately, ClarisWorks doesn't let you directly change the number format of tick-mark labels.





	A	B
1	Force [N]	Stretch [cm]
2	10	7
3	9.8	7.25
4	20.2	10.51
5	30.3	12.35
6	40.1	15.00

Chart Number Formats
Although cells A3:B6 are formatted with decimal places (left), the tick-mark labels on the x-y scatter chart (above, top) are not cluttered with decimal points and postdecimal zeros; this chart plots cells A2:B6, so its labels take their format from cells A2 and B2. Those cells don't seem to be plotted because their formulae (A2=A3 and B2=B3) make them duplicate other plotted values. The bottom chart plots A3:B6, so its tick-mark labels take their format from A3 and B3.

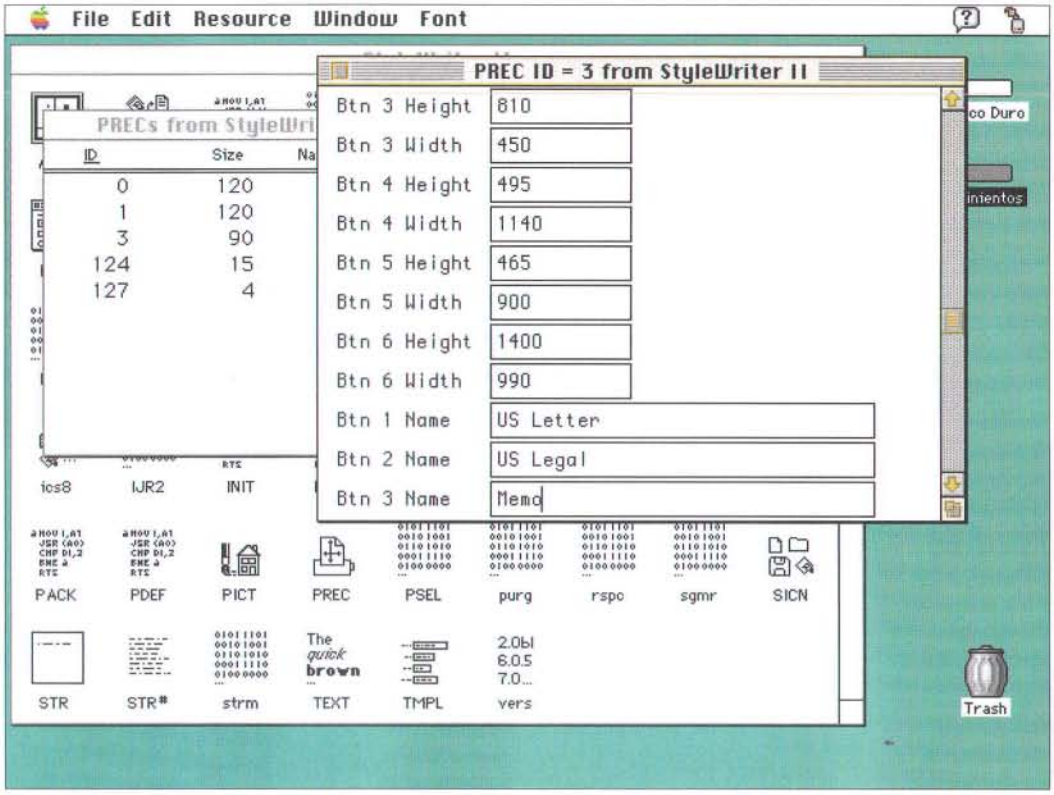
ClarisWorks copies the number format of tick-mark labels from the format of the first value it plots on each axis. So you could simply format the first cell of an axis's data the way you want the axis's tick-mark labels to appear. But this simple solution won't do the trick if you need the spreadsheet to show the full precision of your data.

A trickier technique is to insert dummy spreadsheet cells that change the number format of tick-mark labels without affecting the plotted data, as shown in "Chart Number Formats." First you insert a cell at the beginning of each range of cells plotted on your chart. In each inserted cell you enter a formula that gives the inserted cell the value of the next cell in the range (for example, A2=A3). Then you format the inserted cells as you want the tick-mark labels formatted. A chart that begins with the inserted cells will use them to establish the number format of the tick-mark labels.

Dan Kuchera

StyleWriter Paper Size

TIP: To simplify printing on custom-size pages with a StyleWriter I or II printer, you can modify the StyleWriter II driver with ResEdit 2.1.1 or later.



Custom Paper Size
To customize the Page Size pop-up menu in the StyleWriter II's Page Setup command, use ResEdit to modify the StyleWriter II driver's PREC ID = 3 resource. Here, the height, width and name of the third item in the pop-up have been changed to a 6.75-by-3.75-inch size named Memo. (Height and width are entered in 1/120 of an inch.)

For example, the following steps describe how to change the StyleWriter II's Executive page size to the 6.75-by-3.75-inch page memo size that numerous personal organizers use.

1. Make sure you have a back-up of the StyleWriter II driver. For example, drag the StyleWriter II icon onto the desktop and then option-drag it to the Extensions folder, making a copy there.
2. Use ResEdit to open the StyleWriter II copy, and then open the PREC resource whose ID is 3.
3. Press Tab until you highlight the field labelled "Btn 3 Height". Enter the new page height in inches multiplied by 120 – 810 in this example (6.75 times 120).
4. Press tab again, highlighting "Btn 3 Width", and enter the new page width multiplied by 120 – 450 in this case (3.75 times 120).
5. Press tab again until you highlight the field labelled "Btn 3 Name", and enter Memo (as shown in "Custom Paper Size").
6. Save your changes and quit ResEdit. Make sure the edited StyleWriter II driver is in the Extensions folder.

If the edited StyleWriter II driver is selected in the Chooser, the Page Setup command lists the custom page size as an option.

Florin Neumann

LON POOLE answers readers' questions and selects reader-submitted tips for this monthly column. His latest book is Macworld System 7.5 Bible, third edition (IDG Books Worldwide, 1994).

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Duo Dock: £560 (with 230MB, FPU, VRAM, £885), Duo MiniDock: £325, floppy adaptor: £80

MACINTOSH DETAILS

Model	CPU	FPU	Max RAM	Base VRAM	Max VRAM	No. of NuBus slots	No. of drive bays [2]	Built-in Ethernet
Power Mac 8100	80MHz 601	included	264MB	n/a	n/a	3	3	yes
Power Mac 7100	66MHz 601	included	136MB	n/a	n/a	3	1	yes
Power Mac 6100	60MHz 601	included	72MB	n/a	n/a	1 [3]	1	yes
Quadra 950	33MHz 040	included	256MB	1MB	2MB	5	3	yes
Quadra 840AV	40MHz 040, 66MHz 3210	included	128MB	1MB	2MB	3	2	yes
Centris 660AV	33MHz 040, 55MHz 3210	included	68MB	1MB	1MB	1 [3]	1	yes
Quadra 650	33MHz 040	included	132MB	512K	1MB	3	1	yes
Quadra 800	33MHz 040	included	132MB	512K	1MB	3	3	yes
Quadra 610	25MHz 040	included [4]	68MB	512K	1MB	1 [3]	1	yes
LC 475	25MHz LC040	none	36MB	512K	1MB	0	0	none
Performa 475	25MHz LC040	none	36MB	512K	1MB	0	0	none
Performa 450	25MHz 030	optional	36MB	512K	768K	0	0	none
PORTABLES								
PowerBook 150	33MHz 030	none	40MB	N	N	N	N	none
PowerBook 165	33MHz 030	none	14MB	N	N	N	N	none
PowerBook 180	33MHz 030	included	14MB	N	N	N	N	none
PowerBook 180c	33MHz 030	included	14MB	N	N	N	N	none
PB Duo 230	33MHz 030	none	24MB	N [5]	N [5]	N [5]	N	none [5]
PB Duo 250	33MHz 030	none	24MB	N [5]	N [5]	N [5]	N	none [5]
PB Duo 270c	33MHz 030	included	32MB	N [5]	N [5]	N [5]	N	none [5]

1 Prices exclude keyboard and monitor (check with dealers). **2** For additional drives (excluding internal hard drive and floppy drive).
3 Requires a £70 adaptor; limited to 7in NuBus boards; 6100 AV uses slot for AV card. **4** Not included in base model.
5 Features dependent on dock. All prices exclude VAT, and will vary between dealers.
CPU = central processing unit FPU = floating-point unit, also known as maths coprocessor n/a = not applicable

Mac Update is a directory of hardware and software products for the Mac, organised by key application area and type of hardware.

The directory appears every month (alternating between hardware and software products) and is constantly updated to reflect price changes, upgrades and new products.

v = version number
MW = Macworld Editors' Choice
✪✪✪✪✪ = Macworld rating (1 to 5)
(x/9x) = Macworld review issue (eg 3/94 is March 1994 issue)
✱ = PowerPC native version available

Publishers, manufacturers and distributors should send details of product announcements, changes and corrections to: Mac Update, c/o Gerard Locke, Macworld, 99 Gray's Inn Road, London WC1X 8UT, or fax 0171 405 5308.

PRODUCT	PUBLISHER/MAKER	NOTES	DISTRIBUTOR	PRICE
ACCOUNTS See Macworld May 94 for accounts roundup				
Ad-Hoc Report Generator	Access Accounting	Additional module for Pegasus suite	Access Accounting	£95
Accountant	Sage Sterling	Integrated accounts	Sage	£349
Access Accounts v3	Access Accounting	Integrated accounts	Access Accounting	from£450
Access Intro	Access Accounting	Entry-level accounts	Access Accounting	£295
Access Accounts PowerPC	Access Accounting	Native Integrated accounts	Access Accounting	from£450
Apple Accounting v.2.2	Soft Numbers	Integrated accounts	Soft Numbers	from £900
AppliCount Academic	Applisoft	Accountancy package for schools	Softline	£149
AppliCount Personal v.3.01	Applisoft	Integrated package	Softline	£49
AppliCount Plus	Applisoft	Basic accounts package	Softline	£99
AppliCount Pro v.2.0	Applisoft	Provides analysis and management figures	Softline	£149
Astra Overture v.2.0	S&S Systems	Integrated accounts	DMS Elecs; Wizard	£149
Astra Professional v.2.0	S&S Systems	Integrated accounts	DMS Elecs; Wizard	£625
Bookkeeper	Sage Sterling	Entry-level accounts	Sage	£45
Cash Tracker v.2.0	Flexible Learning Co.	Entry-level accounts	Softline	£149
Classic Accounts	Access Accounting	Entry-level accounts	Access Accounting	£79
Crystal Ball v.3.0	Roderick Manhattan Gp.	Risk-analysis package	Roderick Manhattan Gp.	£295
Crystal Accounts	Quodport	Integrated accounts	Quodport	£295
dBSPay v.5.13	Deverill Business	Payroll	Deverill; Wizard	£195
Dynamics - Invoicing	Kewill Systems	Invoicing module for Dynamics system	Kewill Systems	£1,295
Europay v.3.9	Europay	Scriptable payroll	Training Department	from £295
HandiWorks	LanMarque	Integrated accounts	LanMarque	£125
Home Accounts	Access Accounting	Home accounting	Access Accounting	£45
MacHansa	Baltic Business Software	✱ Accounting for accountants	Wizard	from £790
MacMoney	Survivor Software	Entry-level accounts	Softline	£69
Modulus Gold v.3.5.2	Vector Software	✱ Company managment system	Vector Software	£2,495
Modulus Silver v.3.5.2	Vector Software	✱ Company managment system	Vector Software	£295
Modulus Silver Duo	Vector Software	✱ 2-user Silver	Vector Software	£995
Modulus Silver Duo Plus	Vector Software	✱ 2-user Silver Plus	Vector Software	£1,495
Modulus Silver Plus	Vector Software	✱ Silver + stock & order processing	Vector Software	£495
M.Y.O.B v.3.6	Soft Numbers	Small business/contact magmt	Soft Numbers;Wizard	£195
OFIS Manager	OFIS Systems	Integrated accounts	OFIS Systems	from £1,050
Omnis Accounts	Blyth software	Integrated accounts	Blyth Software	£499
Overture v.2.04	S&S Systems	Entry-level business accounts	DMS Elec; Wizard	£225
Path Legal	Path Info. Systems	Legal accounts	Wizard	£995
Pegasus Accounts v.2.6	Access Accounting	Integrated accounts	Access Account; Wizard	from £349
Pegasus Multi-Currency v.2.6	Access Accounting	Integrated accounts	Access Account; Wizard	per module £744
Pegasus Payroll	Access Accounting	Payroll package	Access Account; Wizard	from £195
Petty Cash	Access Accounting	Petty cash	Access Account; Wizard	£50
Ritz Accounting v.4.0	Ritz Software	Integrated accounts	Principal	£195
Ritz Median	Ritz Software	Entry-level accounts	Principal	£195
Ritz Payroll	Ritz Software	Integrated accounts	Principal	£125

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Ritz Slave Postings	Ritz Software	Lets 2 Macs input data simultaneously	Principal	£100
Ritz Starter Accounts	Ritz Software	Accounts for small businesses	Principal	£25
RiverBANK	RiverCADS	Based on 4D	RiverCADS	£595
Sage Sterling	Sage	Integrated accounts	Wizard; Sage Software	from £149
Systematics	Sapphire Intern.	Integrated accounts	Sapphire Intern.	from £450
Terranova	Technology Research	Integrated accounts/mgmt info.	Technology Research	£695

BUSINESS

See Macworld July 93 for integrated software roundup; May 94 for planning; Feb 94 for graph tips; August 94 for graphing software roundup

Act!	Contact Software	Contact management	Merisel	£295
Address Book Plus	Power Up software	Contacts manager	Axiom	£80
Alarming Events	CE Software	Scheduler/reminder	Computers Unlimited	£100
Artemis Schedule Publisher	AMS	Database/project manager	Lucas Mgmt Systems	£785
AutoRoute Express	NextBase	Route-planning package	Softline	£150
Business Plan	Peninsula Software	Produces plans, cash flows, balance sheets	Peninsula Software	£20
Calendar Creator	Power Up Software	Graphic schedule creator	Axiom	£60
CalendarMaker	CE Software		Computers Unlimited	£45
C•A•T III	Chang Laboratories	Schedule/organizer	Computers Unlimited	£395
Church Administration	Data Developments	Various admin. packages for Churches	Data Developments	Free demo disk
Claris Office	Claris	Integrated software	Frontline	£595
ClarisWorks v.2.1	Claris	✱ Integrated software	Frontline	£195
Contacts Manager	Makin Rochard	Contact and marketing management	Making Rochard	£295
Datebook & TouchBase Pro ✪✪✪✪	Aldus	(9/94) Calendar functions and to-do lists	Principal	£70
DayMaker v.2.0	Pastel development	Personal organizer	Principal	£99
DeltaGraph Pro v.3.0.4 MW	DeltaPoint	✱ (7+8/94) Colour/B&W presentations	Frontline	£139
Desk	Zedcor	Integrated software	MacLine	£195
Dynodex v.3.0 ✪✪✪	Portfolio Systems	Address book/organizer	Computers Unlimited	£80
European postal code boundaries	MapInfo	Postal code data pack	MapInfo	from £1,100
Fair Witness v.1.2.1	Chena Software	Organizing tool	MacWarehouse	£99
FastTrack Schedule	Viatec	Project scheduling package	Viatec	£189
FlexiGraph	TreeStar	Graphical analysis	AM Micro	£129
FlexiTrace	TreeStar	Graphical analysis	AM Micro	£199
Front Runner	Makin Rochard	Sales/Purchasing admin/business	Makin Rochard	£985
Full Contact v.2.01 ✪✪✪	FITSsoftware	✱ (8/94) Infomation manager	Amtech	£129
GreatWorks v.2.0 ✪✪	Symantec	Integrated software	Merisel, Principal	£145
In Control v.3.0 ✪✪✪✪	Attain Corporation	Outlining/organizing tool	Softline	£118
Integration	Claris & WordPerfect	FileMaker Pro 2.1 and WordPerfect 3.0a	Principal	£295
ithink	High Performance	Systems modeller	Gomark	£375
KeyPlan	LanMarque	Project management	LanMarque	£395
MacFlow v.3.7	Mainstay	Flow chart	Computers Unlimited	£240
MacSchedule	Mainstay	Flow chart	Computers Unlimited	£140
Mail & Save	Lateral Thoughts	Direct mail system	Lateral Thoughts	£200
MailManager	Amethyst	Direct mail system	Amethyst	£200
MapInfo v.3.0	MapInfo	Maps of EC countries	MapInfo	£1,095
Meeting MakerXP v2.0	ON Technology	Workgroup scheduler Supports PowerPC	ESP	from£659
Micro Planner v.6.0	Micro Planning Int'l	Project & resource management	Micro Planning Int'l	£295
Micro Planner Manager	Micro Planning Int'l	✱ Project & resource management	Micro Planning Int'l	£695
Micro Planner X-Pert	Micro Planning Int'l	✱ High-level version of above	Micro Planning Int'l	£1,750
Microsoft Office CD	Microsoft	Integrated software	Microsoft; Kimtec	£450
Microsoft Project v.3.0	Microsoft	Project management	Microsoft	£495
Microsoft Works v.4.0	Microsoft	Integrated software	Microsoft	£120
MRD II	Caliach	Manufacturing management	Caliach	from £5,900
Notes v.3.0 ✪✪	Lotus	Workgroup software	Frontline	£435
Opera	EPP Human Factors	Database of EC directives	EPP Human Factors	£575
OS Maps	Ordnance Survey	1:10,000 scale maps of UK	Ordnance Survey	from £45
Org Plus	Banner Blue	Organisational-charting system	Roderick Manhattan	£149
Personnel Manager v.3.1 ✪✪✪✪	Makin Rochard	Personnel management	Makin Rochard	£495
Phoenix	Morgan-Barnett	School management	Wizard	£495
Phone Code Locator	To Telephone Europe	✱ GB/International codes/places	To Telephone Europe	£50
PlanBuilder Plus	DPS Typecraft	Ad management	DPS Typecraft	£15,000
Postcode Address File	Royal Mail	UK postcodes; cd	Optech	£2,500
PostScript Postcodes	Magnum	Maps of postcode areas	Magnum	£95
Power Translator Pro	Globalink	Translates into/from 5 languages	One Stop Software	£700
Prodex	Guidex	Product index for architects	Guidex	£99
Project v.3.0 ✪✪✪✪	Microsoft	Project management	Principal	£495

PRODUCT	PUBLISHER/MAKER	NOTES	DISTRIBUTOR	PRICE
PSSM	Scitor	Project management	Tekware	£550
Quality System Manager	Softsense Business	Helps implement BS5750/ISO9000	Softsense; Rothwell Gp	£1,950
QuickAddress	QAS	Mail database time-saver(PAF)	QAS	£875
QuickAddress Data pro	QAS	Modular suite of datasets	QAS	£950
QuickAddress Pro	QAS	Allocates postcodes/addresses on-line	QAS	from £2,995
QuickDex v.2.0	Casady & Greene	Address book DA	Softline	£45
RagTime v.3.2	LanMarque	Integrated software	LanMarque	£525
RiverMAN	RiverCADS	Business management	RiverCADS	from £495
Sales Team	Consensus	Sales and marketing	Mosaic Computers	from £950
Shortlist	Brainchild	Organizer	Amtech	£65
Synchronicity	Visionary Software	Decision-making tool	Inspiration Tech.	£30
TeamAgenda v.1.6	LanMarque	Time-manager & group scheduler	LanMarque	from £79
Touchbase	Aldus	Contacts database	Principal	£99
Up-to-Date	Now	Calendar package	Frontline	£69
WordPerfect Office v.4.0a	WordPerfect	Workgroup application	WordPerfect	(5-users)£329
WordPerfect Works v.1.2 ❍❍❍	WordPerfect	Integrated works	WordPerfect	£120
COMPUTER-AIDED DESIGN (CAD)				
a FormZ v.2.6	Autodessys	CAD package 12/94	Gomark	£1,214
a Infini-D v.2.6	Specular	CAD package 12/94	Gomark	£531
ArchiCAD v.4.121	Graphisoft	✱ Architectural CAD program	Computers Unlimited	£3,495
Architrion II v.5.8	BAGH	✱ 3D architectural CAD program	Codec	£3,300
Ashlar Score!	Ashlar Vellum	Packaging program	Vellum Software	£3,995
Ashlar Vellum	Ashlar Vellum	✱ 2/3D CAD program	Vellum Software	£1,495/£1,995
AutoCAD v.12	Autodesk	2D/3D drafting and design	Autodesk	£2,800
BluePrint v.5.0 CAD	Graphsoft	✱ Cut-down version of MiniCad+4	Gomark	£210
CADgrabber	LaserPoint	CFF to PostScript conversion	LaserPoint	£5,000
CAD Mover v.4.0	KANDU Sw	Vector Graphics Translator	PRD	£495
Classic Spice	Vamp Inc	Analogue simulation/analysis	Koala Technologies	£645
Cornerstone	Scitex	Packaging design system	Laserpoint	£35,000
cumTerra	Cigraph	Design and modelling package	CAD(Computers) Unlimited	£1,295
DesignCAD 2D/3D	DesignCAD		PMS Instruments	£599
Design Reality	Ashlar Vellum	3D modeller, real time 12/94	Vellum Software	£1,350
Douglas CAD/CAM Prol	Douglas Electronics	For design of printed circuit boards	AM Micro	£1,175
Dreams v.1.1	IDD	Precision drawing and design	Principal	£395
EDS-1/2	Vamp Inc	Front-to-back electronic design	Koala Technologies	from £1,395
Expert Home/Lscape/Office Design	Expert	Design your own evironment	Expert	each £50
Flexisign	Granthams	Sign-making Package	Granthams	from £700
form•Z v.2.5	autodessys	✱ Solid and surface modeller	Gomark	£1,139
Generic CAD	Generic Software		Merisel	£395
Gerber Translator	Vamp Inc	Converts into Gerber format	Koala Technologies	£175
Gerber View	Vamp Inc	Universal CAD bridge	Koala Technologies	£795
HouseMap	Cigraph	Conducts surveys,creates CAD models	CAD(Computers) Unlimited	£595
Imposet	Laserpoint	Packaging design program	Laserpoint	£15,000
IsoDraw v.2.5	Itedo	✱ For technical drawings	Granthams	£2,495
Key CAD Complete	SoftKey	Basic CAD package	SoftKey	£49
KPT Bryce ❍❍❍❍	HSC Software	(9/94) 3D landscape modelling	Principal	£129
LogoMotion ❍❍❍❍	Specular Intern.	✱ (8/94) 3D animation	Gomark	£115
MacBravo!	Schlumberger	Detailer/Modeller	Schlumberger	from £2,750
MacBravo/IGES translator	VIDI		MGA	£330
MacDraft v.2.0	IDD	Precision drawing and design	Principal	£295
MacPlot	Microspot		Principal	£129
MacRoad	Creative Engineering	Road design	Mosaic Computers	£1,295
MacroMind Three-D	MacroMedia Paracomp	3D-rendering program	Computers Unlimited	£1,19
MacSpice Interactive	Deutsch Research	Electronic design	AM Micro	£1,175
MacSpice Professional	Deutsch Research	Electronic design	AM Micro	£1,575
MacSurf	Graphic Magic	Design/engineering CAD	Island Computers	£2,995
MicroStation Mac v.5.0	Intergraph	3D CAD program	Frontline	£3,855
MiniCad 5 ❍❍❍❍	Graphsoft	✱ 2D drafting, 3D design	Gomark	£595
ModelerPro v.1.5	VIDI	3D modelling	MGA	£1,225
ModelShop II v.1.2	Paracomp	Architectural 3D modelling	Gomark	£799
Multiframe	Graphic Magic	Structural Design	Mosaic Computers	from £595
PCB-1/ST	Vamp Inc	Circuit board artwork/layout	Koala Technologies	from £300
Pegasys II	IGC Technology	2D CAD program	DES	£695
PowerDraw v.4.0 ❍❍❍❍	Engineered Software	✱ 2D CAD program	PRD	£675
Presenter Pro v.1.5 ❍❍❍❍❍	VIDI	✱ 3D-modelling 12/94	MGA	£1,850

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PRODUCT	PUBLISHER/MAKER	NOTES	DISTRIBUTOR	PRICE
Professional v.2.043	Macromedia	12/94	Computers Unlimited	£449
Pythagoras	ADW	Modelling for surveyers & civil eng.	Tekware	£1,595
QuickSurf	NCM	✱ 2.5/3D modelling system	Patrick Thorn	£4,500/£7,500
Renderman	VIDI	Runs on VIDIxpress board	MGA	£344
RFDesigner	IngSoft	Electronic design	AM Micro	£1,295
Schematics	Vamp Inc	Electronic circuit schematic capture	Koala Technologies	£395
Schematics DS	Vamp Inc	As above, with digital behaviour simulator	Koala Technologies	£795
Showplace v.2.0 ✪✪✪✪	Pixar	3D design	Computers Unlimited	£549
Strata Studio Pro v.1.5	Strata	✱3D modelling/rendering 12/94	Gomark	£1,067
StrataVision 3D v.3.0	Strata	✱ 3D modelling/rendering	Gomark	£496
Swivel 3D v.2.1	Strata	3D modelling/rendering 12/94	Gomark	£496
Swivel 3D Professional v.2.04	Paracomp	High-end version of above	CU	£599
Touch-3D	Lundstom	Unfolds 3D computer model for printout	Gomark	£299
Tracker	Vamp Inc	Double-sided autorouter	Koala Technologies	£1,200
Trail Blazer	Vamp Inc	Multi-layer autorouter	Koala Technologies	£4,995
upFront v.2.1	Alias Research	✱ 3D conceptual drawing	Gomark	£251
Virtus WalkThrough Pro	Virtus	✱ Spatial design package	Gomark	£410
Zoom v.3.0	Abvent	✱ 3D modelling for architects	PRD	£1,850
CD-ROM REFERENCE				
Art Gallery ✪✪✪✪	Microsoft	(6/94) Art reference	KimTec	£44.44
Bookshelf ✪✪	Microsoft	(9/94) 7 reference books in one	KimTec	approx. £85
Compton's Interactive Encyc.	Compton's	Also available on floppy	Gems	£34.03
Doctor Book of Home Remedies	Compton's	Also available on floppy	Gems	£34.03
Dinosaurs!	Media Design	Encyclopedia	Media Design Interactive	£40
Dinosaurs ✪✪✪✪	Microsoft	(5/94) Multimedia enclyclopedia	KimTec	£49
Grolier Multimedia Encyclo. ✪✪✪✪	Grolier Electronic	(7/94) Multimedia enclyclopedia	Softline	from £99
Guinness Multi. Disc of Records ✪✪	Grolier Electronic	(8/94) Multimedia enclyclopedia	Softline	£50
Isaac Asimov's Ultimate Robot ✪✪✪	Microsoft	(5/94) Robot/Sci Fi CD	KimTec	£49
Let's Go: The Budget Guide to Europe	Compton's	Also available on floppy	Gems	£34.03
New Dictionary of the Living World	Media Design	Multimedia dictionary	Media Design Interactive	£40
New Grolier Encyclopedia ✪✪✪	Grolier Electronic	Multimedia enclyclopedia	Optech	£245
Oxford Reference Shelf	Oxford University Press	16 OUP Reference books in one CD	OUP	£80
RedShift ✪✪✪✪	Maris MultiMedia	(6/94) Space reference	Maris MultiMedia	£79
Small Blue Planet ✪✪✪	Now What Software	(7/94) Earth reference	Softline	£49
COMMUNICATIONS				
See Macworld Sept 93/ Dec 94 for comms software roundup; Nov 93 for email tips; Oct 93/Dec 94 for fax tips; April 93 for ISDN; Dec 94 for wireless comms systems				
AutoPS	4-Sight	Remote printing across ISDN lines	4-Sight	£149
Beyond PowerRules	ESP	Add-on application to System 7 Pro	ESP	single user £65
Broadcast v.1.0	4-Sight	Network access to ISDN and modems	4-Sight	£2,999
Fax PC-Link	4-Sight	Access to Mac fax server	4-Sight	(10-users)£500
FaxPRO ✪✪✪	Delrina Technology	Send/receive faxes	Delrina Technology	£99
FaxPro II	Cypress Reasearch	Send/receive faxes	Letraset	from£275
FaxExpress ✪✪✪	Glenwarne	✱ Single & multi fax software	Glenwarne	from£75
GatorAccess MP 10	Cayman Systems	Multi-protocol remote-access server	CU; Gomark	£395
Inforum	LanMarque	Conferencing software	LanMarque	from £395
LocalPath	Farallon		Principal; Ingram; Gomark	£142
MicroPhone Pro 2.0	Software Ventures	Communications utilities	Computers Unlimited	£270
Newton Connection Kit v.2.0	Apple	Share Newton data with Windows users	Apple	£79
PowerPath	Farallon		Principal; Ingram; Gomark	£106
PowerPort Mercury ✪✪✪✪	Global Village	Fax software	Frontline	£399
Inforum	LanMarque	Conferencing software	Lanmarque	from £395
QuikDial	InTouch	Telephone system software	InTouch	from £99
ScreenLink	DataWatch		MacLine	Twin-pack £65
ShadowLAN	Applied Engineering		AM Micro	£129
SitComm	Aladdin Systems	Datacommunications tool, with Stuffit	MacLine	£75
Smartcom II 4.0	Hayes	Comms Software	Hayes	£99
TeleFinder v.3.1	Spider Island	✱ Remote Access/BBS	AM Micro	£369
4-Sight Telex	4-Sight	Telex system	4-Sight	from £3,499
VersaTerm v.5.0 ✪✪✪✪	Synergy Software	Terminal emulator	Principal; JPY Associates	£149
VersaTerm-PRO	Synergy Software	High-end terminal emulator	Principal; JPY Associates	£239
Vicom Connect v.4.2	Vicom Technology	Communications package	Vicom; Frontline; Principal	£185
Vicom MultiTerm	Vicom Technology	✱ Flexible terminal emulation	Vicom; Frontline; Principal	£245

PRODUCT	PUBLISHER/MAKER	NOTES	DISTRIBUTOR	PRICE
Vicom Pro	Vicom Technology	* Development package	Vicom; Frontline; Principal	£495
White Knight v.11	Freesoft	Communications package	Ingram Micro	£85
CONNECTIVITY See May 94 for comparison of five AppleShare utilities; July 94 for network analysers; Dec 94 for wireless networking				
Acrobat Distiller	Adobe	Archives & Distributes electronic doc.	Adobe	from £500
Acrobat Exchange	Adobe	Archives & Distributes electronic doc.	Adobe	£140
Acrobat for Workgroups	Adobe	10 Acrob. licenses, Distiller & Catalog utility	Adobe	£1,300
Acrobat Pro	Adobe	Adds single-user license for Distiller	Adobe	£485
Acrobat Proofing Approval System	Adobe	Proofing sys. regardless of hard/soft ware	Adobe	£249
Acrobat Reader	Adobe	Archives & Distributes electronic doc.	Adobe	£1,800
Acrobat Viewer	Adobe	Archives & Distributes electronic doc.	Adobe	from £25
Acrobat Proofing Approval System	Adobe	A copy of Distiller +3 copies of Exchange	Adobe	£249
Administrator's Utility	Apple	Network utilities	Apple	from £500
AlisaMail	Alisa Systems	VAX Mail system	JPY Associates	from £13,000
AlisaTalk v.3.4.2	Alisa Systems	VAX AppleServer	JPY Associates	from £1,950
AppleShare v.3.0	Apple Computer	Network server software	Apple	£595
AppleTalk Internet Router	Apple Computer	Network software	Apple	£285
AppleTalk Remote Access	Apple Computer	Connects a Mac to AppleTalk via modem	Apple	£160
AutoFAX	Wilco	Fax sytem for mixed networks	Wilco	from £900
Backburner v.2.6	Specular	* Network renderer	Gomark	£106
cc: Mail for Macintosh v.2.0	Lotus	e-mail package	Lotus	from £360
cc: Mail Remoted for Macintosh v.2.0	Lotus	e-mail package for remote users	Lotus	£215
CheckNET	Farallon Computing	Network management	Principal; Ingram	£75
ColourFax	MacConnect	Acrobat Proofing System + ISDN	MacConnect	£1,395
Common Ground	No Hands Software	Archives & Distributes electronic doc.	Gomark	£149
COPStalk	RedNet	Lets PCs access AppleShare peripherals	RedNet	£199
DataClub Classic/Elite	IBS	Distributed file sharing	Gomark	from £285
DOS Connect	Shiva	Lets TOPS PCs work with NetModem	Principal	£69
DOS Dial-In	Shiva	Lets PC users access TOPS networks	Principal	£69
EasyPack	Access Privilege	EasyTransfer/The Link bundle	Mac Connect	£450
EasyTransfer v.3.1	Access Privilege	* ISDN File transfer	Mac Connect	£295
EasyTransfer	Access Privilege	* ISDN File transfer + Planet 2 card	Mac Connect	£999
E-mail Pilot Pack	Adobe	Acrobat Bundle for email system	Adobe	£685
Envoy	WordPerfect	Archives and distribute electronic doc.	WordPerfect	TBC
Ethernet Hub 2	NRC	Wide Area router/hub	RedNet	from £2,995
EtherPeek v.1.4	AG Group	Network management	Gomark; Principal	£649
EtherShare	Helios Software	UNIX AppleServer	JPY Associates	from £253
EtherShare OPI	Helios Software	OPI graphics'software	JPY Associates	from £5,950
eXodus	JPY Associates	X-Windows server	JPY Associates; Principal	£200
FastSwitch 10/100	Grand Junction Networks	Combines Ethernet & Fast Ethernet switch	Gomark	£8,073
FileRouter	Mac Connect	File management + data transfer	Mac Connect	£350
FileRouter PS	Mac Connect	As above + PostScript compatibility	Mac Connect	£1,490
GatorLink	Cayman	Remote access server	Gomark	from £390
GatorPrint/GX/EX	Cayman	Lets mixed networks share printers	Gomark	from £398
GatorShare GX	Cayman	LocalTalk to Ethernet	Gomark	£795
GraceLAN Asset Manager v. 2.0	Technology Works	Network management	TechWorks	£720
GraceLAN Server Manager v.2.0	Technology Works	AppleShare server management	TechWorks	£299
Image Transfer	WorkStation Source	Transfers images from Unix	WorkStation Source	£350
InBox Plus	Sitka (formerly TOPS)	E-Mail; IBMs and Macs as servers	Merisel; Frontline	free with TOPS
Inforum	LanMarque	Mac-conferencing	LanMarque	from £395
Inter•Poll	Apple Computer	Network management	Apple	£100
InterSep	Archetype	Network management	Art Electric	£100
KeyServer v.3.1	LanMarque	License control + software usage logging	LanMarque	(10-users) £635
Lightspeed NVS/Mac	MacSoft	Wang VS integration	Quintel	from £995
LocalPeek	The AG Group	Network management	Gomark; Principal	£349
LockSmith	Hi Resolution	Security System	Hi-Resolution	£35
MacBlast	Open Comms	* Communications and file transfer	Open Communications	£195
Mac 220/240/241/330/3540	White Pine Software	Emulators	JPY Associates, Principal	from £120
MacGateWay AT	Wollongong Group		Frontline	£1,530
MachTen v2.1	Tennon Systems	Berkeley Unix for any Mac	RedNet	£495
MactoDOS v.3.1	PLI	Read/Write Mac disks	Key Exchange	£95
MacIPX	Novell		Novell	from £340
MacIRMA Graphics	DCA	Allows mainframe graphics modification	Principal; Gomark	£119
MacIRMA Workstation	DCA		Principal; Gomark	from £325

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IMAGING CENTRE

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PRODUCT	PUBLISHER/MAKER	NOTES	DISTRIBUTOR	PRICE
MacLANVIEW	Cabletron Systems	Network analysing software	Cabletron Systems	£1,150
PersonalMacLAN v4.0	Miramar	Mac/PC Sharing Program for printers	Gomark	from£140
MacMainFrame SDLC	Avatar		Gomark	£1,090
MacMainFrame Token Ring	Avatar		Gomark	£335
MacMainFrame TokenRing Gateway	Avatar		Gomark	from £2,090
MacMainFrame Workstation	Avatar		Gomark	£849
PathWay Access v3.0	Wollongong Group	Print Utility Software	Wollongong	from £295
MacSupervisor v.2.0 ✪✪✪✪	Hi Resolution	Network management	Hi Resolution	from £595
MacVisa	Hi Resolution	✱ Network managment	Hi Resolution	from £375
MailMate/MM/QM	Alisa Systems	MM/VMS, QM/VMS mail Gateway	JPY Associates	£595
MaxNotes	Alisa Systems	VAXNotes on Mac	JPY Associates	£260
Microsoft Mail (10-user)	Microsoft	E-mail, messaging and file transfer	Principal	£550
Microsoft Mail v3.0 Server	Microsoft	E-mail, messaging and file transfer	Principal	£275
MultiGate 2000	NRC	LocalTalk-to-Ethernet router	RedNet	£995
MultiGate Hub	NRC	12- or 24-port hub	RedNet	from £1,895
NetAtlas	Farallon	Network management	Gomark; Principal; Ingram	£495
NetPatrol Pack	The AG Group	Network management	Principal	£995
netOctopus	LanMarque	Network management	LanMarque	from £475
NetScope Management	Dayna	Network management	Computers Unlimited	£900
NetScrap	Everyware	Network scrapbook app.	EuroSource	£249
NetUtilities	Technology Works	Network utilities	TechWorks	£94
NetWare for Macintosh	Novell	Mac/PC network operating system	Merisel; Ingram Micro	from £777
NetWare for Macintosh v.4.0	Novell	Versions for up to 200 users	Merisel	from £350
Net Watchman	AG Group	Network management	Gomark; Principal	£199
Network Utilities	Tech Works		Gomark; Principal; VQuest	£89
Network Vital Signs v.1.1	Dayna	Network utilities	Computers Unlimited	£400
NetWorks Junior	Caravelle	Network utilities	Gomark	£235
NetWorks Professional	Caravelle	Network utilities	Gomark	£790
NFS Share	InterCon Systems	File sharing (Unix, VMS, IBM mainframe)	Principal	£195
NFS/Share	Shiva	Mac-Unix file-sharing	JPY Associates, Principal	£220
Octopus	LanMarque	Network management	LanMarque	from £475
PacerConnect	RedNet	DEC VAX to ADSP	RedNet	£2,295
PacerForum	Pacer	Network conferencing	RedNet	from £695
PacerPrint	Pacer	Spooler for PostScript/Unix printers	RedNet	from £1,195
PacerShare	Pacer	DEC/HP/Sun PCs to AppleShare servers	RedNet	from £1,149
PacerTerm	Pacer	Front-end terminal emulator	RedNet	£279
PathWay NFS for Macintosh	Wollongong Group		Frontline	from £867
pcMACTERM II	DMA	Mac-PC control/file transfer	Merisel	£130
Personal MACLAN v.4.0	Miramar	Bidirectional printer sharing utility	Gomark	from £140
PhoneNET CheckNet v.2.0	Farallon		Gomark; Principal; Ingram	£79
PhoneNET Liaison	Farallon		Gomark; Principal; Ingram	£299
PhoneNET Talk	Farallon		Gomark; Principal; Ingram	£150
PowerScript II	Solution	Image-management	Solution	£POA
QuickMail v.2.5	CE Software	Mixed network E-mail	Computers Unlimited	from £170
Radar	Sonic Systems	Network utilities	Gomark	£416
Reflection 1+ and 3+	Walker Richer & Quinn	Links Macs into HP hosts	Wick Hill IMX	£259/£349
Reflection 2+ and 4+	Walker Richer & Quinn	Links Macs to DEC and Unix hosts	Wick Hill IMX	£240/£345
Reflection Network Series	Walker Richer & Quinn	Links networked Macs to various hosts	Wick Hill IMX	from £129
Replica	Farallon	Archives and distribute electronic doc.	Gomark; Principal; Ingram	from £75
RunPC/Network/Remote ✪✪	Argosy	Mac-PC control/file transfer/translator	Key Exchange	from £135
Server Sentry v.2.0	Sonic Systems	AppleShare server management	Gomark	£397
Sentry Server	Sonic Systems		Gomark	from £119
Server Tools	Santorini	Management tools for network admin.	Amtech	from £195
Server Tracker	Santorini	Management tool for network admin.	Amtech	from £120
Silver Cloud	AG Group	Network management software	Gomark; Principal	from £349
SoftAT	Insignia Solutions	286 PC emulation	Principal; Frontline	£399
SoftPC Professional	Insignia Solutions	DOS emulation	Principal; Frontline	£199
SoftPC with Windows 3.1 ✪✪	Insignia Solutions	✱ Windows emulation	Principal; Frontline	£299
SoftPC Universal	Insignia Solutions	DOS emulation	Principal; Frontline	£99
Software Bridge/Mac v.2.0	Argosy	PC/Mac WP file translator	Key Exchange	£99
Soft Windows v.1.0 ✪✪	Insignia Solutions	(8/94) Windows emulation	Principal; Frontline	£299/£329
Status Mac	On Technology	Network utilities	Principal	£499
ST-PSP	Stalker Software	PortShare Pro	Semaphore	£95
TCP/Connect II	InterCon Systems	Mac to TCP/IP file transfer	Principal	from £950
TheLink	Access Privilege	✱ ISDN networking	Mac Connect; 4-Sight	£350
Timbuktu v.5.0	Farallon	Network control	Gomark; Principal; Ingram	from £159
Timbuktu Pro ✪✪✪✪	Farallon	(5/94) Network control	Gomark; Principal; Ingram	from £159

PRODUCT	PUBLISHER/MAKER	NOTES	DISTRIBUTOR	PRICE
Timbuktu/Remote	Farallon	Remote control of Macs	Gomark; Principal; Ingram	£149
TokenPeek	AG Group	Network utilities	Gomark; Principal	£715
TOPS v.3.1	Sitka	Peer-to-peer networking application	Merisel; Ftline; Principal	£219
TotalMac	Syntax	Connectivity to Unix workstations	Dataguild	from £800
TrafficWatch II v.2.0 ✪✪	Farallon	(7/94) Network management	Gomark, Principal; Ingram	£355
TransTalk ISDN Pack	Transware	Standalone networked half-router	Gomark	£2,905
TribeStar IP	Tribe Computer Works	LocalTalk-ethernet hub bridge	Gomark	£1,749
TSSGate	Thursby Software	DECNet router for Mac	JPY Associates	£690
TSSNet	Alisa Systems	DECNet implementation for the Mac	JPY Associates	from £250
Universal	Insignia Solutions		Principal; Frontline	£95
VersaTerm	Synergy Software	Terminal emulation software	Principal	from £99
WatchTower	InterCon Systems	Network management	Principal	£1,495
WI-NETD	Wilder System	NetDistributor	RedNet	£495
Word for Word	Mastersoft	PC/Mac WP file translator	Key Exchange	£99
XGator	Cayman Systems	X-Windows/Mac network access	Principal	from £349

DATABASES

See Macworld January 94 for relational-database roundup; Nov 93 for graphics databases

4D Calc	ACI	Spreadsheet add-in for 4D	ACI	£199
4D Compiler	ACI	Database compiler	ACI	£650
4D First ✪✪✪	ACI	(5/94) Relational database	ACI	£195
4D Mover	ACI	4D resource editor	ACI	£130
4D Online Help	GTec	Online Help system for 4D	Gtec	£199
4D Server v.1.0.1 ✪✪✪	ACI	Multiple-user version 4D	ACI	from £1,125
4D Write	ACI	WP add-in for 4D	ACI	£199
4th Dimension v.3.01 ✪✪✪✪	ACI	Relational database	ACI	£795
Ad Production	Digital Technology	Publishing database	DPS Typecraft	£9,99
BrioPublish v.1.0	Brio/Frame Technology	Databse publishing tool for Framemaker 4	EuroSource	£595
Butler v.1.2.6	EveryWare	Relational database: supports DAL	EuroSource	£265
CatBase v.3	BBF Publishing	Catalogue/directory publishing	BBF Publishing	from £595
CatBase Classified	BBF Publishing	Catalogue/directory publishing	BBF Publishing	£2,500
ClassSpeed	Digital Technology	Database for publishing	DPS Typecraft	POA
Cumulus v.2.0	Canto Software	✱ Image database	Computers Unlimited	5-users £1,099
Cumulus Lite v.2.0	Canto Software	✱ Single-user of above	Computers Unlimited	£179
DataEdit v.2.0	Brio Technology	Relational data-management tool	EuroSource	£750
DataPivot v.1.5	Brio Technology	Data analysis and reporting tool	EuroSource	£99
DataPrism v.2.1	Brio Technology	Easy access to databases	EuroSource	£330
dBASE IV RunTime Plus	Ashton-Tate	To access dBASE PC files	Principal	£395
EL-CID	Architech	Construction industry database; CD	Optech	£1050
Fetch v.1.2	Aldus	Image database	Aldus	£195
File Force v.1.1	ACI	Entry level version of 4th Dimension	ACI	£295
FileMaker Pro v.2.1	Claris	Networking support	Claris	£275
FileMaker Pro Server	Claris	Networking support for 100 users	Claris	£1,390
FileMaker Solutions Developers Kit	Claris	Creates custom solutions	Claris	£690
FoxPro for Mac v.2.5	Microsoft	Relational database	Microsoft	£240
Helix Express v.2.0.1 ✪✪✪✪	Helix Technologies	(7/94) Icon-based relational database	Helix Technologies	£420
Kudos	Full Manor Design	Recruitment database	FullManor Design	£2,000
Kudo Image Browser ✪✪	Imspace Systems	Image database	Principal	£195
ImageAccess v.1.0	Nikon	Image database	Nikon	£330
Maple Picture Publishing	Stonehand	Image database	Heyden & Son	£395
Mariah	Symmetry	Image database	Merisel	£120
Multi-Ad Search v.2.0	Multi-Ad Services	Image database	Multi-Ad Services	£165
NetScrap v.1.2.5	EveryWare	Client server image database	EuroSource	for 3 users £99
Omnis 5	Blyth Software	Relational database, colour graphics	Blyth Software	£595
Omnis 7 v.2.0	Blyth Software	Relational database, programmable	Blyth Software	£2,500
Panorama	Provue	Flat-file database, with draw package	Forester	£295
P•Ink SQL	LanMarque	Relational database	LanMarque	from £599
Shoebox v.1.0 ✪✪✪	Eastman Kodak	Image database	Computers Unlimited	£99

DESKTOP PUBLISHING

See Macworld December 93 for QuarkXPress vs PageMaker contest

Artbeats	Artbeats	DTP backgrounds	Kimtec	£499
Ad Layout System	Automatrix	Ad dummying software	Studio Box	£5,500
ALS with Forms Manager	Automatrix	As above with colour control	Studio Box	£6,995
3B2	Advent	Page layout & typography	AM Varityper	£1,695
Chatterbox PServe ADS	Scangraphic Visutek	Graphics and font spooling system	Scangraphic Visutek	£6,450

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PRODUCT	PUBLISHER/MAKER	NOTES	DISTRIBUTOR	PRICE
CheckPost	Nine Bits	Creates PostScript files from any app.	MacEurope	£249
Cheshire	Abbott Systems	Image management	AM Micro	£89
Classified Layout System	Automatrix	Classified layout system	Studio Box	£4,500
ColourCentral v.2.2	Compumation	* Relieves printing delays	MacEurope	£3,495
ColorSense	Kodak	Colour management	Riva	£350
Cutline v.3.3	Patrick Thorn	* PostScript output to vinyl cutter	Patrick Thorn	£495
DataShaper	DataMac	Database publisher	Merisel	£249
DesignStudio International	Letraset	Page layout;inc. 8 language dictionary	Principal	£595
DesignStudio Separator	Letraset	With colour-separation process	Principal	£295
DesignStudio Special Edition	Letraset	No colour-separation process	Principal	£145
Editorial Layout System	Automatrix	Editorial layout control	Studio Box	£1,595
Editorial Layout System	Automatrix	Editorial layout control	Studio Box	£1,595
EuroFocus Colour Publishing CD	CU/P*ingenerie/Prisma	Supplements existing layout/graphic prog.	Computers Unlimited	£599
Expert Publisher/Writer	Expert		Expert	each £50
Fast Forms	Power Up Software	Form creator	Axiom	£125
FrameMaker v.4.0 ○○○○	Frame Technology	* Page layout for large tech docs	Frontline	£695
Home Publisher v.2.0 ○○○○	Iona Software	(8/94) Low-end page layout	Iona Software	£70
Kodak Renaissance v.1.1	Kodak	Page layout	Computers Unlimited	£299
LogoCorrector v.2.0	Illom Ciccone	* Tidies logos created in other packages	Patrick Thorn & co.	£295
MacLabelPro	Avery Dennison	Label maker	Amtech	£115
Managing Editor XT/Pro	Automatrix		Studio Box	£59/£99
Multi-Ad Creator v.3.6	Multi-Ad Services	Page make-up for advertising	Studio Box	£795
OnTap	Automatic Software	Quark XPress extensions	XChange International	£79
PageMaker v.5.0 ○○○○○	Aldus	* Page layout	Principal; Aptec; Ingram	£695
Personal Press v.2.0 ○○	Aldus	Low-end page layout	Principal	£99
PrePrint	Aldus	Colour production tool	Ingram Micro	£450
PressWise v.2.0	Aldus	Page imposition/ template-creator	Principal	£2,395
Print Shop Deluxe ○○○○	Brøderbund	Design and print program	Electronic Arts	£60
QPS Entry System	Automatrix	Editorial management system	Automatrix	£9,900
Rainbow Software RIP-v3.0	3M	Colour-Proofing Program	3M	£325
Scoop v.2.0	MacEurope	* Editorial system	MacEurope	£595
SpreadEPS v.1.4	Ferax	Quark extension	MF Graphics	£300
Sticky Business v.1.6.4	William & Macias	Labelling software	Amtech	£95
Sticky Business Plus v.1.6.4	William & Macias	Labelling software + bar codes	Amtech	£125
Tableworks Plus v.1.05 ○○○○	NPath	Publishing utility to create tables	XChange	£310
The Complete DTP	Kagema	Typeface, photo & clipart bundle	Kagema	£999
Trapmaker ○○○○	Aldus	Traps pagemaker objects	Aldus	£55
TrapWise v.2.0	Aldus	Traps all page elements	Principal	£3,325
QuarkXPress v3.3 ○○○○○	Quark	* (9/94) Page layout	CU; Ingram	£895
ReadySetGo! v.6.0	Letraset	Low-end page layout	Letraset	£249
SmartForm Designer v3.1	Claris	Forms & stationery design	Claris	£295
Textures	Blue Sky Research	Creates scientific documents	Focal Image Ltd	£560
TrueForm	Adobe Systems	Forms & stationery design	Principal	£270
Ventura Publisher	Ventura Software	Page layout	Aptec	£695
XTensions	Various	QuarkXPress extensions	Heydon & Son	from £225
XTensions	Various	QuarkXPress extensions	The Last Word	from £40
XTensions	Various	QuarkXPress extensions	The Waterloo Group	from £295
XTensions	Various	QuarkXPress extensions	Typetronics	from £95
XTensions	Various	QuarkXPress extensions	XChange	from £99
XTensions	Various	QuarkXPress extensions (Arabic)	XChange	£1250
EDUCATION				
Active Eye	Erlbaum Ass.	Tutorial on visual perception	Capedia	£525
A Field Trip to the Rainforest/ Sea	Wings for Learning	For ages 7-15 years	Capedia	each £50
A. Dvorak: Symphony No. 9 ○○○	Voyager CD-ROMs	(9/94) Complete perform., realtime score	Kimtec	£54
Spiegelman: Complete Maus ○○○○	Voyager CD-ROMs	(9/94) Graphic novel, background, clips	Kimtec	£40
Bank Street Writer	Scholastic	Writing tool	Capedia	£99
Berlitz Think and Talk	HyperGlot	Foreign language courses	Guildsoft	£160
Botanical Gardens	Wings for Learning	For ages 11-16 years	TAG	£45
Blockers and Finders	Wings for Learning	Problem-solving; 4 to adult	TAG	£45
Calculus	Brøderbund	Interactive calculus	Capedia	£61
ClarisWorks Templates	Claris	Curriculum-based templates	TAG	£30
Concert Ware + MIDI	Great Ware	Complete music package	Capedia	£138
Creative Writer ○○○○	Microsoft	(7/94) Writing package; 8-14 yrs	Microsoft	£49
Crystal Rain Forest	Sherston	8-11 yrs, adventure set on planet Oglo	Sherston Software	£40
Culture	Intellimation	Overview of Western culture	Capedia	£155

Mac Update: Products & Services

PRODUCT	PUBLISHER/MAKER	NOTES	DISTRIBUTOR	PRICE
Dimple	Cherwell Scientific	Interactive image-processing system	Cherwell Scientific	Education Only£750
Kid Cuts	Brøderbund	Creative-paint package, ages 4-12 years	Electronic Arts	£35
Eagle Eye Mysteries	Humongous Enter.	Reading + language package for 8yrs +	Softline	£40
Early Learning software	Various	Variety	TAG	from £9
Europe in the Round	TAG	EC facts; 11- college	TAG	£175
Explorer	Logal	Experiment-based software	Capedia	from £25
Eye Lines	Walter Beagley	Eye-experiment design	Capedia	£75
Fatty Bear's Birthday Surprise	Humongous Ent.		Softline	£30
Fatty Bear's Fun Pack	Humongous Ent.		Softline	£40
Fine Artist ✪✪✪✪	Microsoft	(7/94) Creative-paint package; 8-14 yrs	Microsoft	£49
Flexible Writing Planner	Intellimation	Writing tool	Capedia	£25
Flintstones Colouring Book	Image Smith	30 images to be coloured-in	Softline	£16
Flo Stat	Senecio Software	Statistics and mapping	Capedia	£64
FormPro	Omtech	Designs OMR; 16 years +	Callhaven	£495
Geometer's Sketchpad	Key Curriculum Press	Geometry	Capedia	£115
HyperAtlas/StudentAtlas	Intellimation	Outline world map	Capedia	£25
HyperMIDI 2.0	Nigel Redmond	Teaches how to use MIDI in Hypercard	Capedia	£135
HyperShelf	Intellimation	+ 300 writing assignments	Capedia	£25
HyperTrainer	Intellimation	HyperCard trainer	Capdeia	£24
Insight - In Colour	Intellimation	Illustrates visual phenomena	Capedia	£38
Interactive Physics II	Logal	Physics simulation laboratory; 14 years +	Capedia	POA
Prince Interactive ✪	Graphix Zone	(8/94) Interactive music video	Active Distribution	£50
IPSS	Senecio Software	Deomgraphic simulation	Capedia	£185
Jam Factory	David Zicarcelli	Dev. composing & improvising skills	Capedia	£98
Japanese for Everyone	Educorp	Language tutor on CD	Kimtec	£175
Joshua's Reading Machine	Compu-Teach	Stories	Chandi	£35
KidPix	Brøderbund	Educational ; 4 to adult	TAG; Softline	£30
KidPix Companion ✪✪✪✪	Brøderbund	Add-on; supports QuickTime	TAG; Softline	£23
Kids Desk	Iona Software	Children can customize their desktop	Principal	£35
Kid Works 2 ✪✪✪✪	Davidson	Story-creation for 4-11 years	TAG	£37
Learn 100,000 Words	Intellimation	Vocabluary-development	Capedia	£25
Learn About Animals/Insects/ Plants	Wings for Learning	4-7 years	TAG	each £45
Learning Tool	Intellimation	Study-organizer	Capedia	£33
Learn to Speak Series	HyperGlot	French/Spanish/English tutors; CD	Optech	£75
Learn to Speak Spanish	Guildsoft	CD with 30 interactive chapters	Guildsoft	£99
Learn With Asterix CD	Eurotalk	French tutorial	Capedia	£65
Lego Dacta	LEGO	Design Technology	Apple	£400
Lesson Writer	Intellimation	Interactive-lesson develper	Capedia	£24
Living Books	Brodeslan	Stories on CD; 4-11 years	Electronic Arts	£40
Mapper Series	TAG	About the weather, the body & the home	TAG; Capedia	£44
Marvin Minsky: Society of Mind ✪✪	Voyager CD-ROMs	(9/94) Graphic book, QuickTime movies	Kimtec	£40
Maths Blaster Plus!	TAG	Basic maths	TAG; Capedia	£45
Mathematics Mactutor	Maths Inst., Fife	For further and higher education	Apple	£250
Millie's Math House	Iona Software	Childrens maths package	Principal	£45
Music Mouse	Dr. T's	Turns Mac into instrument	Capedia	£48
Neural Computation	Erlbaum Ass.	Introduction to neural nets	Capedia	£199
Notator Logic v.1.2	Sound Technology	Sequencer & scorewriter	Capedia	£390
Peanuts	ImageSmith	Kids learn maths, geography, reading	Softline	£45
PenDown	TAG	Word processor for schools; 5-16 years	TAG; Capedia	£54
Peter Pan	EA Kids	A story painting adventure	Electronic Arts	£40
Ping & Kooky's Cuckoo Zoo	Humongous Enter.	Set on a zoo train for ages 3-6	Electronic Arts	£40
Process Writer	Scholastic	Word processor for ages 8-11	Capedia	£99
Putt Putt Goes to the Moon	Humongous Ent.	Educational game	Softline	£40
Question Mark v.1.10 ✪✪✪	Question Mark	(7/94) Test creation and administration	Question Mark	£249
ROSIE	Rosie Marketing	Fiction database	Capedia	£55
Safari Search	Wings for Learning	Animal search; 4 to adult	TAG	£45
Scooter's Magic Castle	EA Kids	25 educational games for children	Electronic Arts	£40
SpeakWrite	Nostik/Century 21	French, German, Spanish training	Capedia	£95
Spell-A-Saurus	First Byte	Speller for ages 6-12	Chandi	£25
Spell It Plus	Davidson	Spelling for ages 10-adult	Chandi	£40
Statistics Workshop	Sunburst Comm	14 years +	TAG	£76
Storybook Theatre	Wings for Learning	Story-creation for 4-14 years	TAG	from £45
Success with Writing	Scholastic	Writing tool	Capedia	£99
SuccessMaker	CCC	Teach/Assess for Maths,Science,English	AM Learning Sys.	Comprehensive£3735
Take A Look Behind the Scenes - Zoo	MDI	Chronicles the daily events in a zoo	Media Design Interactive	£40
Talking Once Upon a Time Series	Nordic	Story-creation and illustration	Chandi	£35
Theatre Game	Intellimation	Play-simulation	Capedia	£35

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PRODUCT	PUBLISHER/MAKER	NOTES	DISTRIBUTOR	PRICE
The Factory	Wings for Learning	Design Technology; 4-14 years	TAG	£45
Treaty of Versailles	Intellimation	Decision-making programme	Capedia	£25
Treehouse	Brøderbund	Children discover mustic, science,maths	Electronic Arts	£40
Tutorial Collection	Personal Tutorial Systems	Word, Office, P'Mker, Excel, Sys 7.?	PTS	from£60
Twelfth Night ✪✪✪✪	XPloratorium	Shakespeare education; CD	XPloratorium	£95
V-Scope	Univ. British Columbia	Tachistiscope	Capedia	£199
VideoMaker	Intellimation	HyperCard authoring system	Capedia	£33
Weathermapper	TAG	About the weather; 4-16 years	TAG	£45
WhizAtlas/Map/Surf	WTC Scientific	Range of maps	Capedia	£145
WorldWise Clip Art	Intellimation	Bit-mapped graphics of Europe	Capedia	£25
Your Language Trainer	MS Systems	English, French & German grammar	Capedia	£67
ENTERTAINMENT				
See Macworld January 95 for Macworld Game Hall of Fame				
Aqua Blooper Piper	Casady & Greene	Arcade puzzle	Softline	£39
Battle Chess	Electronic Arts	Animated chess	Softline	£30
Carriers at War II	Electronic Arts	Wargame	Softline; Electronic Arts	£38/£45
Carmen World Deluxe	Brøderbund	Educational chase game on CD	Electronic Arts	£60
Casino Master	Inspiration tech	Casino-game simulation	Inspiration technology	£32
CD-Fun House	Wayzata	Shareware games; CD	Optech	£40
Chess Champion 2175	Oxford Softworks	Chess	Softline	£29
Chess Master	Mindscape	Chess	Mindscape	£36
Chuck Yeager	Electronic Arts	Flight simulator	Softline	£30
Civilization ✪✪✪✪	MicroProse	Won Best Strategy Game of 93	MicroProse	£39
Cogito	Inline Software	Won Best Brain Game (tie) of 93	MacLine	£29
Colony	Mindscape	3D arcade adventure	Mindscape	£31
Cosmic Osmo	Activision Inc	Space travel game; CD	Optech	£65
Crystal Caliburn Pinball	StarPlay	Pinball game set in time of King Arthur	Softline	£40
Crystal Crazy ✪✪✪✪	Casady & Greene	(6/94) Arcade game	Softline	£40
Crystal Quest ✪✪✪✪	Casady & Greene	Arcade game	Softline	£25
Dark Seed	Cyber Dreams	Fantasy adventure	Softline	£38
Deliverance	Arcadis	Arcade game	Softline	£34
Diamonds v.2.0	Varcon Systems	Won Best Arcade game (tie) of 93	MacLine	£29
Distant Suns	Distant Suns	Desktop Planetarium	PC Connections	£55
Dracula Unleashed	Viacom	Interactive movie game	Softline	£42
Falcon MC	Spectrum HoloByte	Won Best Simulation (tie) of 93	Softline	£30
Flight Simulator v.4.0	Microsoft	Flight simulator	Microsoft	£45
Flying Nightmares	Domark Software	✸ Flight simulator	Softline	£30
Glider 4.0	Casady & Greene	Arcade game	Softline	£39
Global Dilemma	Mindscape	Strategy game	Mindscape	£36
Go Junior	Inspiration tech	Basic version of Go	Inspiration technology	£23
Go Master	Inspiration tech	Oriental game Go	Inspiration technology	£40
Heart of China	Dynamix	Far East cinematic adventure	Sierra	£35
Hell Cab ✪✪✪	Time Warner Interactive	Interactive CD adventure	KimTec	£67
Hellcats over the Pacific ✪✪✪✪	Graphic Simulations	WW2 flight simulator	Softline	£29
Instant Access to Entertainment CD	Instant Access	Catalogue of games, utilities, etc.	Instant Access	£40
Iron Helix CD	Drew Pictures	3D animation adventure	Softline	£89
ITN World News '93 CD	MDI/ITN	Interactive video of last years news	MDI	£39
King Arthur's Magic Castle	Optech	Fantasy adventure; CD	Optech	£33
King's Quest VI	Sierra On-Line	Won Best Fantasy adventure of 93	Sierra On-Line	£40
Labyrinth of Time	Electronic Arts	Manipulate time in King Minos's labyrinth	Electronic Arts	£40
Lemmings for the Mac	Psygnosis Software	Won Best Arcade game (tie) of 93	Softline	£39
Lunicus	Cyberflix	Won Best CD game of 93	KimTec	£67
MacGlobe v.1.3	Brøderbund	Geographical reference	Softline	£34
MacGolf	XOR	Golf	Software Club	£80
MacSki	XOR	Skiing arcade game	Software Club	£70
Manhole	Mediagenic	Adventure game; CD	Optech; Kimtec	£40
Mindset	Inspiration tech	Positive suggestions	Inspiration technology	£30
Mission Starlight	Casady & Greene	Arcade game	Softline	£39
Monkey Island 2 ✪✪✪✪	LucasArts Games	Adventure game	US Gold	£50
Mission Thunderbolt	Casady & Greene	Aliens vs humans after A-bomb	Softline	£29
Myst on CD ✪✪✪✪	Brøderbund	Surrealistic adventure on an island	Electronic Arts	£34
No Greater Glory ✪✪✪	SSI	Strategic wargame	US Gold	£35
Oh No! More Lemmings	Psygnosis Software	Arcade game	Softline	£26
Oids	Software Heaven	Arcade game	Softline	£29
Oxyd	Dongleware	Won Best Brain Game (tie) 93	shareware	$4

PRODUCT	PUBLISHER/MAKER	NOTES	DISTRIBUTOR	PRICE
Pathways into Darkness	Bungie	✱ Won Best Role-Playing Game of 93	Softline	£40
Pax Imperia ✪✪	Changeling	Strategic simulation in space	Softline	£39
Peter and the Wolf CD	USD	Fairy-Tale Childrens' Story	Softline	£45
PGA Tour Golf II ✪✪✪✪	Electronic Arts	Golf	Softline	£45
PGA Tour Golf Extra Courses	Electronic Arts	Golf, supplement to above	Softline	£15
Populus	Bullfrog	Fantasy adventure	Electronic Arts	£40
Prince of Persia ✪✪✪✪	Broderbund	Fantasy advernture	Softline	£35
Return to Zork	Activision	Fantasy adventure	Softline	£50
Rise of the Dragon	Dynamix	Adventure in future LA	Sierra	£35
Red Baron ✪✪✪✪	Dynamix	Air combat	Sierra	£28
Redshift	Maris Multimedia	Desktop planetarium	Softline	£69
Road Racer	XOR	Sports car simulator	Software Club	£70
RoboSport	Maxis	Robotic warfare	Ocean Software	£30
Secret of Monkey Island ✪✪✪	LucasFilm	Pirate adventure	US Gold	£35
Sherlock Holmes	ICOM	Detective game; CD	Software Toolworks	£50
SimAnt	Maxis	Formicary simulation	Ocean Software	£35
SimCity 2000	Maxis	Urban simulation	Ocean Software	£40
SimCity 2000 Scenarios	Maxis	Add ons for the urban simulation	Ocean Software	£15
SimEarth	Maxis	Global simulation	Ocean Software	£41
SimLife ✪✪✪	Maxis	Evolutionary simulation	Ocean Software	£40
Sky Shadow	Casady & Greene	Shoot 'em up arcade game	Softline	£25
Spectre Supreme	Iona	3D tank battle	Principal	£59
Spelunx ✪✪✪	Broderbund	Educational adventure	Softline	£39
Spin Doctor ✪✪✪✪	Broderbund	(6/94) Educational adventure	Softline	£39
Star Trek: 25th Anniversary ✪✪✪	Broderbund	(6/94) Educational adventure	Softline	£40
Stratego	Accolade	Strategic wargame	Softline	£30
Super Maze Wars	Callisto	3D maze battle Best Network game of '93	Softline	£69
Swamp Gas	Iona Software	Explore Europe as an alien	Softline	£45
Syndicate	Electronic Arts	Violent futuristic adventure	Electronic Arts	£45
Thumbelina CD	USD	Fairy-Tale Childrens' Story	Softline	£40
Visions	Inspiration tech	Astrology system	Inspiration technology	£25
Wallobee Jack Series	WordPerfect	Interactive adventures on CD	WordPerfect	£29
Where in Space is Carmen Sandiego	Broderbund	The adventure continues in space	Softline	£34
Wrath of the Gods	Luminaria	Graphical adventure	Maxis	£45

GRAPHICS

See Macworld Dec 94 for 3D modellers; Oct 93 for low-cost drawing; Nov 93 for colour painting; Nov 94 for Photoshop filters

Abstracts I/Blue Cactus Series	Global Abstracts	100 abstract photographyCD	Global Abstracts	£795
addDepth v.1.0.2	RayDream	3D PostScript design	Amtech	£139
Alias Sketch! v.2.0	Alias Research	✱ 3D drawing 12/94	Gomark	£610
Animation Master	Hash Inc.	Rendering and animation	PRD	£799
Animation System v.2.0 ✪✪✪	Electric Image	3D drawing and animation 12/94	Bit UK	£6,495
ArtRoom v.5.2	Kagema	Clip art on CD	Kagema	from £299
Atlantis Renderv.1.6	Abvent	Ray- tracingsoftware	PRD	£799
Birfolio v.6	Management Graphics	British clip art on CD	Management Graphics	£99
BrushStrokes v.1.0	Claris	32-bit paint program	Frontline	£45
Butterflies of the World	Media Design Inter.	Clip art on CD	Media Design Inter.	£30
Cachet 1.0 ✪✪✪	EFI	Colour image editor	Computers Unlimited	£495
CA-Cricket Draw v.3.0	Computer Associates	QuickDraw drawing	Frontline; Principal	£225
CA-Cricket Graph III v.1.52 ✪✪✪	Computer Associates	fast graphing 12/94	Frontline; Principal	£145
Canvas v.3.5 ✪✪✪	Deneba Software	QuickDraw drawing	Principal	£295
Catalogue CD	Image Bank	4,000 images with Kodak Browser	Image Bank	£96
Certificate Kit	Graphic Aids	Certificate design	Translatum	£42
ChartMaker ✪✪	Aldus	Easy to use charting software	Aldus	£99
Cirrus PowerLite v.2.0	Canto	✱ Entry level scanning software	Computers Unlimited	£179
Cirrus PowerPro v.2.0	Canto	✱ Scanning software	Computers Unlimited	£549
ClarisDraw ✪✪✪✪	Claris	✱ QuickDraw program 12/94	Claris	£275
ClarisImpact ✪✪✪	Claris	✱ (5/94) Automatic business graphics	Claris	£225
Classic Art Vol. 2 + 3	Aldus	Effects for documents	Principal	£99
ClickArt	T/Maker	Clip art	Principal	£389
Clip Art Masterpieces	Wayzata	300 engraved/woodcut images on CD	Optech	£85
ColorROOM	Educorp	Colour software on CD	Kimtec	£32
Collage v.2.0	Specular	✱ Image layout program	Gomark	£270
Collection Ed.1/2	Adobe	PostScript clip art	Principal	from £100
ColorStudio v1.5	Letraset	Image editing (colour)	Principal	£395

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SCSI PowerBook Cable		£32.95
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(10 Pack)		£108.00
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(10 Pack)		£104.00

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AAUI Transceiver 10 Base-2	~~£49.99~~	£34.99
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E'Net Card NuBus Combo	~~£89.99~~	£79.99
E'Net Card LC Combo	~~£89.99~~	£79.99
10Base-T 8 Port Hub	~~£225.00~~	£135.00
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PRODUCT	PUBLISHER/MAKER	NOTES	DISTRIBUTOR	PRICE
Comic Strip Factory	Foundation Publishing		Translatum	£54
Comstock Desktop Photography	Comstock	Photographic clip art on CD	Optech	£350
DarkRoom	Kagema	375 B&W photos	Kagema	£299
deBabelizer	Equilibrium	Translation and processing package	Letraset	£399
deBabelizer Lite ●●●●	Equilibrium	(5/94) Translation and processing package	Letraset	£99
Decades ●●●	Hulton Deutsch	Photo clip art on CD	Hulton Deutsch	£35
Decades 4-pack	Hulton Deutsch	4 Decades pack of photo clip art on CD	Hulton Deutsch	£125
DiagramMaker v3.7 ●●●	Burnway	Customizable drawing	Burnway	£170
Digital Car Library	Granthams	Scale drawings European vehicles	Granthams	from £155
Digital Collection	Letraset	Fontek Type 1 and TrueType display fonts	Letraset	each £30
Digital Darkroom v.2.0	Aldus	Image editing (greyscale)	Principal	£325
Dimensions v.2.0 ●●●●	Adobe	✱ (9/94) 3D PostScript design	Principal	£165
Down to Earth	Wayzata	Nature clip art; CD	Optech	£150
EcoDisc CD	ESM	Simulated nature reserve	Capedia	£150
Educorp Clipart	Educorp	Assorted clip art; CD	Optech	£40
Elasticreality v.1.2●●●●	ASDG	Morphing package 12/94	Softline	£349
Elegance Images	Iris Graphics	Decoration Design Collection	Iris Graphics	£50
Elegance Tiles	Iris Graphics	Tile Design Collection	Iris Graphics	£50
Expert Colour Paint v.1.0	Expert	24-bit paint program	Expert	£50
Expert Draw	Expert		Expert	£50
Expressions Mega Pack	CDL	Clip art	CDL	£50
F. Design Painter v.3.0	Fractal Design	✱ 24-bit colour paint	Principal; Letraset	£375
F. Design Dabbler ●●●	Fractal Design	✱ (7/94) Basic painting similar to Painter	Principal	£75
Floppy Full of Brushes	Xaos	Collection of 50 brushes	Principal	£50
FotoLook 1.2	Agfa	✱ Scanning software	Agfa	£299
FotoTune 1.1	Agfa	✱ Scanning software; CD	Agfa	£495
FreeHand v.4.0 ●●●●●	Aldus	✱ PostScript drawing	Principal; Aptec; Ingram	£450
FreeSign	Patrick Thorn	✱ For sign makers or screen printers	Patrick Thorn	£895
Fresco	Xaos	Photoshop plug-in	Principal; Letraset	£160/£179
Graphic Aids	Graphic Aids UK	Cartoon clip art	Translatum	£24
Illustrator v.5.5 ●●●●●	Adobe Systems	✱ (7/94) PostScript drawing	Principal	£480
Image Assistant v.1.1	Caere Corporation	Image-editing	Principal	£449
Image Collection	2 Business	Monthly copyright-free photos,illustrations	2 Business	per month £75
ImageStudio v1.7	Letraset USA	Image editing (greyscale)	Principal	£195
Images with Impact!	Letraset USA	Assorted clip art	Principal	£80
Infini-D 2.6	Specular	✱ 3D modelling/rendering	Gomark	£540
Infini-D Replicas	Specular Int'l	Surface-simulation catalogues	Gomark	£142
Initial Caps	Arid	748 capitals, borders and symbols,	Linographic	£79
Inprint Art Library Vol. I & II	Inprint	Graphical textures and images on CDs	Unica	each £39
Instant Art	Magnum	Assorted clip art images; CD	Magnum	£145
IntelliDraw v.2.0 ●●●●	Aldus	(8/94) "Smart" object-orintated drawing	Aldus	£150
JAG II v.1.0	RayDream	Anti-aliasing utility	Amtech	£115
Kai's P. Tools v.2.0 ●●●●●	HSC	"Smart" object-orintated drawing	Principal	£129
Kai's P. Tools v.2.1.	HSC	✱ Native Power PC Version of above	Principal	£129
Kodak Access Plus	Kodak	Opens/Exports photo CD files	Computers Unlimited	£25
Kodak PhotoEdge	Kodak	As Access, with image editor	Computers Unlimited	£49
Kodak Photo CD Acquire Module	Kodak	Photoshop plug-in	Computers Unlimited	£80
Kodak Shoebox	Kodak	Image management	Computers Unlimited	£99
Letraset Digital Specifier	Letraset	Full range of Letraset + Linographic fonts	Letraset	each £30
Live Picture v.1.5 ●●●●	FITS Imaging	✱ (9/94) Image manipulation	Principal	£3,500
MacFlow v.2.1 ●●●●	Mainstay	Customizable drawing	Computers Unlimited	£240
MacGlobe	Brøderbund	Map database	Electronic Arts	£34
MacPaint v.2.0	Claris	Black-&-white paint	Claris	£95
MacRenderMan v.2.1	Pixar	Modelling and rendering 12/94	Letraset	from£295
Macromedia Three-D v.1.2	Macromedia	3D modelling	Computers Unlimited	£1,199
MacroModel v.1.5.1	MacroMedia	✱ 3D modelling 12/94	Computers Unlimited	£699
MacTOPAS v.1.2	AT & T GSL	High end modelling and rendering	Techex	£2,550
Maps in Minutes ●●●●	RH Publications	PostScript Map, needs Freehand/Illust.	RH Pub.; MacWarehouse	from £79
Monet v.2.0	Delta Tao Software	24-bit paint program	Kim Tec	£266
Morph v.2.5 ●●●●●	Gryphon Software	✱ Image-melding utility-PowPC Native	Softline	£179
Mountain High Maps	Digital Wisdom	CDs of 74 relief projections & globe views	Digital Wisdom	£695
Mountain Map Frontiers	Digital Wisdom	Editable outline maps	Digital Wisdom	£120
Oasis v.1.0	Time Arts	32-bit colour paint	SDG&T	£580
Ocean Imagery	Rick Doyle	Photographic clip art; CD	Optech	£59.99
Ofoto v.2.0	Light Source	Scanner software	Computers Unlimited	£295
One Twenty Eight	Pixar	Photographic textures on CD	Commputers Unlimited	£239
Paint Alchemy ●●●●	Zaos	Hand-drawn/painted effects	Principal	£80

PRODUCT	PUBLISHER/MAKER	NOTES	DISTRIBUTOR	PRICE
Painter X/2 ❂❂❂❂❂	Letraset	Extension to Painter 2.0	Principal	£99
PC Paintbrush Photo/ClipArt Library	Softkey	Double CD of 2,500/3,003 images	Softkey	£39
PeopleSize	Friendly Systems	Anthropometry package	Friendly Systems	£149
Photo CD Access	Kodak	Opens/exports Photo CD files	Computers Unlimited	£39
Photo CD Access Plus	Kodak	Opens/exports Photo CD files	Computers Unlimited	£40
Photo CD	Andromeda Interactive	3 Volumes-Classic Cars, Landscapes,Plants	Andromeda Interactive	£37
PhotoDisc ❂❂❂❂	21st Century	Photographic clip art; CD	DirekTek	£595
PhotoFlash v.2.0❂❂❂❂	Apple	✱Image editing	Apple	£175
PhotoLib	Kagema	Electronic photo library service; CD	Kagema	from £29
PhotoLib Go! ❂❂❂	Kagema	(8/94) 100 high res-images on CD	Kagema	£199
Photo Library	Quadra Communications	Electronic photo library service; CD	Quadra Communications	£140
PhotoScript v.1.5	Pisa Systems	PostScript 2 supports Canon/Apple printers	Pisa Systems	£95
Photoshop v.3.0❂❂❂❂❂	Adobe Systems	✱ (11/94) Image editing (colour)	Principal	£725
Phototone Textures ❂❂❂❂❂	Letraset	Background image CD	Letraset	£30
PICK Librarian	Image Data Systems	Image management tool	Image Data Systems	£145
PixelPaint Professional v.2.0	SuperMac	24-bit colour paint	Principal; Frontline	£595
PixelPaint v.2.1	SuperMac	8-bit colour paint	Principal; Frontline	£149
Planet Earth CD	Anglia University	Images and transcripts of Earth	Capedia	£25
Plants and Animals	Kagema	PhotoLib CD of flowers, landscapes,animals	Kagema	£299
Playmation v.1.1.3	Art Electric	Spline-based modelling and animation	Art Electric	£349
PowerDraw v 5.0	Engineered Sw	2d draughting package	PRD	from£675
PowerDraw Translator	Engineered Sw	Graphics Translator for above	PRD	from£190
PostScript UK/Europe/World	Magnum	Outline maps	Magnum; Capedia	£95
Publisher's Resource	Electronic Pen	PostScript clip art	Softline	£150
Publishing Pack	Adobe Systems	PostScript clip art	Principal	£360
Ray Dream Designer v.3.1.1 ❂❂	Ray Dream	✱ Modelling,rendering 7/94 ,12/94	Principal	£275
Scanjet IIcx/T ❂❂❂	Hewlett Packard	Scanning soft/hardware pack	Hewlett Packard	from£930
Sculpt 3D/4D	Byte by Byte	✱ 12/94	PRD	£2,210
Sculpt 4D	Byte by Byte	3D modelling and animation	PRD	from £3,300
Shade III v.1.1	Extools	✱	PRD	£2,666
Shapes	Letraset	Image add-on for ColorStudio	Principal	£295
Showbiz	TC Visual	Animated clip art, CD	TC Visual	£97
Showplace	Pixar	3D graphics; CD	Computers Unlimited	£369
Sketch!	Alias Research	✱ 3D modelling and rendering	Gomark	£699
Sketcher ❂❂❂❂❂	Fractal Design	Greyscale paint	Letraset	£99
Smart Art	Adobe Systems	PostScript clip art	Principal	£125
Spectre Print Pro v.3.0	Pre Press Technology	Scanning and colour separation package	Graphic Arts Software Sol.	£2,450
Spectrum Clip Art	Cognitive Applications	Assorted images; CD	Optech	£42
Sports CD	Gazelle Technologies	Sport clip art; CD	Optech	£42
Streamline v.3.0 ❂❂❂❂	Adobe Systems	Bitmap-to-PostScript conversion	Principal	£185
Studio/1	Electronic Arts	Monochrome paint	Principal	£99
Studio/8 v.1.1	Electronic Arts	8-bit colour paint	Principal	£199
Studio/32 v.1.2	Electronic Arts	32-bit colour paint	Principal	£426
Super 3D v2.5	Aldus	3D modeller	Principal	£399
SuperPaint v.3.5	Aldus	8-bit paint and draw	Principal	£195
Travel I and 2	Kagema	PhotoLib CDs of European countries	Kagema	£299
Terrazzo ❂❂❂	Xaos	Photoshop plug-in	Principal;Letraset	£160
TextureScape	Specular	✱ High-res synthetic textures + images	Gomark	£132
Tree ❂❂❂		Tree-drawing package	Gomark	£354
Tree Professional	Onyx Computing	✱ Tree-drawing package	Gomark	£740
UltraPaint	Deneba Software	8-bit paint and draw	Principal	£149
Viewfinders Vol. One	Information Technology	Picture libary of British images	Information Technology	£100
WalkThrough v.1.1.3	Virtus		Gomark	£410
Wheeler Clip Art	Quanta Press/Wayzata	2,200 images; CD	Optech	£165
Zeus v.0.94	Delta Tao Software	Painting program	Kim Tec	£333
Zoom v.4.6	Abvent	3D modelling, rendering & Animation	PRD	£1850
Zoom Light	Abvent	Cut-down version of above	PRD	£699

MATHS/NUMERICAL ANALYSIS

See Macworld October 93 for statistics roundup; August 94 for graphing software roundup

Data Desk 4.2 MW	Majih Software	✱ Data analysis package	Majih Software	£400
DataPivot ❂❂❂	Brio	Data analysis package	Principal	£195
HiQ v.2.0 ❂❂❂❂	BiMillenium	Maths, statistics & graphing	National Instruments	from £595
LabSuite	BiMillenium	Bundled HiQ and LabView	National Instrument	£2305
KaleidaGraph v.3.0	Synergy Software	(8/94) Data analysis/graphing	JPY Associates; Principal	£250
Maple V Release 3	Brooks/Cole	✱ Maths/algebra package	Clecom	£320

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PRODUCT	PUBLISHER/MAKER	NOTES	DISTRIBUTOR	PRICE
MathCAD v.3.1 ❍❍❍	MathSoft	Calculation/plotting package	Adept Scientific	£375
Mathematica v.2.2	Wolfram Research	✱ Numerical and symbolic calculation	Wolfram Research	from £645
MathLink for Excel	Wolfram Research	Connection between Mathematica and Excel	Wolfram Research	£35
MathType v.3.0.f	Design Science	Mathematical typesetter	AM Micro	£89
MatLab v.4.2❍❍❍❍	Rapid Data	✱ numerical tech/graphics 12/94	Rapid Data	£1,600
MatLab Statistics Toolbox	Cambridge Control	A modelling and data analysis package	MathWorks	£477
Milo	Paracomp	Maths equation solver	Gomark	£185
Neural Works Explorer	NeuralWare Inc.	Introduction to neural nets	Scientific Computers	£295
Neural Works Professional II/Plus	NeuralWare Inc.	Neural net development tool	Scientific Computers	£1,695
Nonlinear Control Design Toolbox v.2.0	MathWorks	For MatLav designers of nonlinear systems	MathWorks	£862
QC Tools	Abacus	Add-on for StatView	Cherwell Scientific	£199
StatView v.4.02	Abacus	✱ Data analysis and presentation	Cherwell Scientific	£450
StatView + QC Tools bundle	Abacus	Above package with add-on	Cherwell Scientific	£550
SPSS v.6.1	SPSS	data, statistics, graphics	SPSS	£695
Spyglass Dicer	Spyglass	(8/94) Data analysis/visualization	Adept Scientific	£295
Spyglass Transform v.3.0 ❍❍❍	Spyglass	Data analysis/visualization	Adept Scientific	£495
Survival Analysis	Abacus	Stat. techniques extension for StatView	Cherwell Scientific	£249
TK Solver Plus	Universal Tech Software	Maths calculation	Universal Tech Software	£330
MULTIMEDIA				
See Macworld July 93 for CD ROM drives				
After Effects ❍❍❍	CoSA	QuickTime editing	Gomark	£985
Amazing Animation		Lets kids create cartoons,movies, games	Frontline	£35
Animation Works	Gold Disk	Colour animation, text and tiling	Merisel	£125
Authorware Professional v.2.0	Macromedia	Authoring package	Computers Unlimited	£3,750
Backgrounds for Multimedia	Artbeats	Multimedia clip art	Kimtec	£289
Bravado24	RasterOps	Video-editing package	Frontline	£3,650
Cinemation v.1.0	Vividus	Colour animation, sound handling	MacWarehouse	£299
ClipMedia ❍❍	MacroMedia	Ready-made multi-media clips	Computers Unlimited	£299
Course Builder	TeleRobotics	Science/engineering courseware creation	AM Micro	from £655
Director v.4.0 ❍❍❍❍	MacroMedia	(9/94) Colour animation, sound handling	Computers Unlimited	£999
Dynamic Effects ❍❍❍❍	Gryphon Software	(6/94) Specia-effects library for Premiere	Softline	£95
Guide	OWL	HyperText-based information manager	Merisel	£200
Hypercard v.2.2 ❍❍❍	Apple	(9/94) Multimedia development tool	Apple	£100
Hypercard Player	Claris	Runtime utility	Frontline	£29
Life Forms ❍❍❍❍	Macromedia	Human-figure animation	Computers Unlimited	£399
MacroMedia Accelerator	Macromedia	See Director	Computers Unlimited	£175
MacroMind 3D	Macromedia/Paracomp	3D-modelling/rendering	Computers Unlimited	£1,195
Magic v.1.1 ❍❍	Macromedia • Paracomp	Entry-level authoring	Computers Unlimited	£399
MediaMaker	Macromedia	Multimedia presentation	Computers Unlimited	£395
Media Suite Pro ❍❍❍	Avid Technology	Video-producition system	MetroVideo	£8,500
MediaTracks	Farallon	Creates Mac training materials	Gomark,Principal,Ingram Micro	from £219
MediaWall	RGB Spectrum	Presentation system	Greyhawk Europe	from £23,000
Movieworks v.1.1 ❍❍	Interactive Solutions	QuickTime-editing	Catalyst	£299
Passport Producer ❍❍❍	PassPort Designs	Video-editing	MCM	£425
Premiere 4.0 ❍❍❍ ❍❍	Adobe	✱ Video-editing package	Adobe	£595
Phrasea	B & L Parenthesis	MultiMedia archiving package	LanMarque	from £575
SoundEdit 16❍❍❍	Macromedia	16-bit graphic sound editor	Computers Unlimited	£349
SoundEdit Pro v.1.0.5	Macromedia	Graphic sound editor	Computers Unlimited	£269
Special Delivery	Interactive Media	Presentations, interactive training, CDs	Gomark	£289
TitleWorks	elcom	Text-insertion	Catalyst	
The Animation Stand	Linker Systems	Film animation	Catalyst	£1,980
The Fixer	Aston	Video graphics	Aston	£500
VideoDirector v.1.5	GoldDisk	Home video-editing system	Frontline	£150
VideoFusion v.1.6	VideoFusion	✱ Video-editing	Computers Unlimited	£549
VideoFusion QuickFLIX!	VideoFusion	✱ Video-editing for home/ beginners	Computers Unlimited	£129
VideoShop v.2.0 ❍❍❍❍	AVID	Video-editing package	MetroVideo	£395
MUSIC				
Alchemy	Passport Designs	Sample editor	MCMXCIX	£439
AudioTrax	Passport Designs	Sequencing and audio	MCMXCIX	£179
Audioshop	Opcode	Entry-level multimedia	Capdedia	£68
Book of MIDI	Opcode Systems	Educational HyperCard stack	MCMXCIX	£45
Cubase Lite	Steinberg	16 Track Entry Level Sequencer	Capedia	£81
Cubase Audio	Steinberg	Midi and digital audio	Evenlode Soundworks	£587
Cubase Score	Steinberg	Cubase with Score	Evenlode Soundworks	£424

PRODUCT	PUBLISHER/MAKER	NOTES	DISTRIBUTOR	PRICE
Cue v.3.0	Opcode Systems	SMPTE cue list	MCMXCIX	£429
Deluxe Music Construction Set	Electronic Arts	Entry-level score writing	Argents	£89
Deluxe Recorder	Electronic Arts	16-track sequencer	Argents	£99
Desktop Creativity Kit	Passport Designs	Trax, Sound Exciter and HyperMusic	MCMXCIX	£199
Desktop Sounds CD	Optical Media Int'l	Sounds collection	MCMXCIX	£85
Encore	Passport Systems	64-stave notation	MCMXCIX	£369
EZVision	Opcode Systems	Entry-level sequencer	MCMXCIX	£110
EZ Starter Kit	Opcode Systems	EZVision, Book of MIDI and Interface	MCMXCIX	£199
Finale v.3.0.1 ✪✪✪	Coda Software	The Score Writing Programme	MCMXCIX	£595
Finale Academic	Coda Software	As above, education deal	MCMXCIX	£200
Galaxy	Opcode Systems	Librarian for 90+ Midi devices	MCMXCIX	£179
Galaxy Plus Editors	Opcode Systems	Generic Editor/Librarian	MCMXCIX	£299
Grooves	Media Design	Musical clips; CD	Media Design Interactive	£40
H B Engraver	HB Music	Professional Scorewriter	Argents	£569
MAC	Opcode Systems	Programming language	MCMXCIX	£295
Mac Powered Stereo	Opcode Systems	High-powered Mac speakers	MCMXCIX	£180
Midi Play	Opcode Systems	HyperCard-based MIDI jukebox	MCMXCIX	£45
Midi Strip	Music Quest	1 in/3 out MIDI interface	Digital Music	£49
Midi Translator	MCM	1 in/3 out MIDI Interface	MCMXCIX	£49
MusicProse	Coda Software	64-stave notation	MCMXCIX	£349
Notewriter 2	Passport Designs	Freehand score writing	MCMXCIX	£369
Passport Mac-MIDI	Passport Designs	Mac-MIDI interface	MCMXCIX	£70
Perceive	Coda Software	Ear Training Programme	MCMXCIX	£85
Performer v.5.0	Mark of the Unicorn	Unlimited track sequencer	Argents	£459
Pro AudioSpectrum 16	Datrontech	16-bit audio and playback	Datrontech	from £260
Pro 4.5	Passport Designs	Sequencer	MCMXCIX	£310
Pro Music Production Kit	Passport Designs	Pro4 Encore, Alchemy, ClickTracks	MCMXCIX	£1,295
Professional Composer	Mark of the Unicorn	Score Writing Package	Argents	£459
SC-7	Roland	Music module with MIDI	Roland	£335
Sound Magic	Passport Designs	CD of sounds	MCMXCIX	£312
Sound Machine	Educorp	450 sounds; CD	Kimtec	£32
Studio 3	Opcode Systems	2 in/6 out MIDI interface and SMPTE	MCMXCIX	£299
Studio 5	Opcode Systems	15in/15 out MIDI interface	MCMXCIX	£895
Studio Plus 2	Opcode Systems	2 in/6 out MIDI interface	MCMXCIX	£155
StudioVision	Opcode Systems	Sequencing and digital audio	MCMXCIX	£695
TimeBandit v1.5	Steinberg	Time & Pitch Software	Harman Audio	£399
Timecode Machine	Opcode Systems	SMPTE reader/generator	MCMXCIX	£120
Track Chart	Opcode Systems	Studio utility program	MCMXCIX	£139
Trax	Passport Designs	Entry-level systems	MCMXCIX	£59
Vision	Opcode Systems	Sequencer	MCMXCIX	£349

OPTICAL CHARACTER RECOGNITION

See Macworld November 93 for OCR roundup

AccuText 3.0	Xerox		XIS	£225
Catchword Pro	Logitech	OCR package	Frontline	£99
OmniPage v.3.0	Caere	OCR package	CU; Aptec	£395
OmniPage Direct ✪✪✪	Caere	Simple OCR package	Computers Unlimited	£229
OmniPage Pro v.5.0 ✪✪✪✪	Caere	* High-end version	CU; Aptec	£595
Readright	OCR Systems	OCR package	Merisel	£325
Recognize	Dest	OCR package	FormScan	£495
TextBridge v.2.0 ✪✪	XIS	OCR package	XIS	£99
TextPert	CTA	OCR package	Heyden & Son	£895
TypeReader	Expervision	OCR package	Computers Unlimited	£595
WordScan	Calera	OCR package	Frontline	£249
WordScan Plus	Calera	OCR package	Frontline	£549

PRESENTATIONS

See Macworld July 94 for presentations roundup; Jan 94 for presentation tips; August 94 for graphing software roundup; Jan 94 for presentation panels/projectors

Astound v.1.0.1	Gold Disk	(7+8/94) Presentations program	Frontline	£99
Action! v.1.0 ✪✪✪	Macromedia	With ClipMedia; supports QuickTime	Computers Unlimited	from £399
CA-Cricket Presents v.1.0	Computer Associates	(7+8/94) Colour/B&W presentations	Frontline; Principal	£325
ClarisImpact	Claris	* (7+8/94) Colour/B&W presentations	Frontline	£225
DeltaGraph Pro v.3.0.4 **MW**	DeltaPoint	* (7+8/94) Colour/B&W presentations	Frontline	£139
GraphMaster	Visual Business	Chart and graphing	Riva, Principal	£195
Magic v.1.1	MacroMedia	Presentations program	Computers Unlimited	£399

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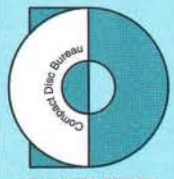

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Quadra 610 8/230+CD	£call
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INFO No.360

PRODUCT	PUBLISHER/MAKER	NOTES	DISTRIBUTOR	PRICE
MORE v.3.1	Symantec	(7/94) Outliner with presentations facility	Principal; Frontline	£289
Persuasion v.3.0 MW ✪✪✪	Aldus	(7/94) (9/94) Presentations program	Principal; Frontline	£350
PowerPoint v.3.0	Microsoft	(7/94) Presentations program	Principal; Frontline	£345
Show 32	MicroFrontier	Slide presentations package	Neutral	£95
SPREADSHEETS				
See Macworld September 93 for Excel tips				
ChemOffice	MC2	Graphical spreadsheet	MC2	from £775
Cruncher	Ablac	Spreadsheet, tutorial features	Ablac	£45
Excel v.5.0	Microsoft	✱	Principal	£260
Macintosh Mathcad v.3.1	Mathsoft	Contains records of scientific formulae	Adept Scientific	£375
Wingz v.1.1	Informix		Principal	£295
UTILITIES				
See Macworld April 94 for top utilities and backup roundup; July 94 for antivirus roundup				
7th Heaven	Logical Solutions	Collection of utilities	MacWarehouse	£50
Superset Utilities	Datawatch	Hard disk toolkit	Softline	£87
AccessPC v.3.0 ✪✪	Insignia Solutions	DOS disk to Mac cdev	Principal; Frontline	£79
After Dark	Berkeley Systems	Screen saver	Softline	£34.99
Alarming Events	CE Software	Personal organizer	Frontline	£99
Alsoft Power Utilities ✪✪✪	Alsoft	Utilities package	Softline	£89
AppleScript Scripter Kit	Apple	Integrates elements of different packages	Apple	£125
AppleSearch ✪✪✪	Apple	Search utility	Apple	from £2,315
ARCserve	Cheyenne Software	Backup, available in multi-user packs	Cheyenne Software	from £180
At Ease	Apple	Security Finder substitute	Principal	£35
AutoDoubler v.2.0.1	Symantec	File compression	Principal	£59
AutoSave II	Magic Software	Automatic file saver	Softline	£35
Backmatic	Magic Software	Backup	Softline	£65
Bundle of Utilities	Iona & Central Point	MacTools, Stuffit Deluxe & UnderWare	Principal; Frontline	£80
Calculator Construction Kit	Dubl-Click		Merisel	£65
CanOpener	Abbott Systems	Universal file reader	AM Micro	£89
Capture v.4.0	Mainstay	ScreenGrabber	Computers Unlimited	£80
CD Directory	Insignia Solutions	CD directory	Insignia	£50
CD Toolkit	FWB	Caches CD directory	Midwich Thame	£69
ClickChange	Dubl-Click	Finder customizer	Merisel	£55
Colossal PS RIP	Colorgen	RIP Software	Colorgen	£5,500
Conflict Catcher II	Casady & Greene	✱ Locates conflicts 12/94	Softline	£59
CopyDoubler v.2.0	Symantec	Copy utility	Principal	£49
CopyPrinter Controller	Gestetner	✱ Turns copier into 20ppm printer	Gestetner	£1,995
Copyright	CAB Communications	Finder copy utility	CAB Communications	£46
Corkboard v.1.5	MacToolkit		MacWarehouse	£110
CDU	Connectix	Collection of utilities	Computers Unlimited	£80
CPU v.2.0 ✪✪✪✪	Connectix	PowerBook utilities	Computers Unlimited	£80
DanRIP	Stantech	✱ RIP for Linotype-Hell imagesetters	MacawMac	£16,000
Dayna Profiles v.1.0 ✪✪✪	Dayna	✱ (8/94) File navigation/ enhances Finder	Computers Unlimited	£99
Desktape	Optima Technology	Sys. exten. mounts tape devices on desktop	Nextage	£350
Desktop Utilities v.1.0 ✪✪✪	Connectix	16 general-purpose System 7 utilities	Computers Unlimited	£380
Disinfectant v.3.3 MW	John Norstad	Anti-virus	Shareware	Free
DiskDoubler v.4.0 ✪✪✪	Symantec	✱(8/94) File compression	Amtech; Principal	£59
DiskExpress II	ALSoft	Disk optimizer	Softline	£65
DiskFit Direct v.1.0	Dantz Development	Back up	Principal	£39
DiskFit Pro v.1.1A	Dantz Development	Back up	Principal	£99
DiskGuard	Highware	Mac security system	Softline	£89
DiskLock	Fifth Generation	File security	Principal; Riva UK	£110
DiskLock PB v.1.0 ✪✪✪✪	Symantec	2-tiered security	Principal,Riva UK	£39
DiskMaker	Golden Triangle	Disk formatting	DirekTek	£99
DiskPaper	Farallon	Views documents without application	Gomark; Principal; Ingram	£115
Disk Quota	Amtech	Server Disk Space Arranger	Amtech	from£120
DiskTop v.4.0	CE Software	Application launcher	Computers Unlimited	£80
Disney Collection ✪✪✪	Berkeley Systems	Screen saver utility	MacLine	£29
DocuComp	Advanced Software	File-comparison	Cherwell Scientific	£149
DOS Mounter Plus v.4.0 ✪✪✪✪	Dayna	DOS disk to Mac cdev	Key Exchange; CU	£70
Drive CD v.1.0	Casa Blanca Works	CD utilities	Amtech	£49
Drive 7 v.2.3.8	Casa Blanca Works	Universal drive formatter/updater	Amtech	£65
DriveShare v.1.0.2	Casa Blanca Works	Network access to removable drives	Amtech	£115

Mac Update: Products & Services

PRODUCT	PUBLISHER/MAKER	NOTES	DISTRIBUTOR	PRICE
DriveTech ✪	MicroMat Computer Systems	Cleaning and diagnostics package	MacWarehouse	£50
DynoPage	Portfolio Systems		Computers Unlimited	£100
EasyServer	COPS	Lets you use PC as AppleShare server	RedNet	£1,695
Educorp	Educorp	Shareware collection; CD	Optech	£120
Empower I v.4.1	Magna	File security	Amtech	£129
Empower II v.4.1	Magna	File security	Amtech	£239
Empower Remote v.4.1	Magna	File supervision	Amtech	£285
EndLink v2.0	Niles Ass.	Reference & Bibliography-builder	Cherwell Scientific	£99
EndNote Plus v2.0	Niles Ass.	Enhanced version of EndNote	Cherwell Scientific	£229
Exposure Pro	Preferred	Screen grabber	Softline	£95
Fastback Express	Fifth Generation	Back-up	Principal; Riva	£65
Fastback Plus v.3.0.1	Fifth Generation	Back-up	Principal; Riva	£109
File Assistant	Apple	Updates files on PowerBooks and Macs	Apple	£50
File Director	Fifth Generation	Alternative Finder	Principal; Riva	£75
FileGuard	Highware	Mac security.	Softline	£169
First Things First	Visionary Software	Time manager	Principal	£49
FolderBolt	Kent Marsh	Folder security	Ingram Micro	£77
FontMixer 1.0 ✪✪✪	Monotype	Mixes different fonts	Monotype	£49
Freedom of Press Classic ✪✪✪	ColorAge	PostScript emulation	DirekTek; Kagema	£129
Freedom of Press Pro v.3.0.4	Custom Applications	Supports 32-bit QuickDraw	DirekTek; Kagema	£1,495
GOfer	Microlytics	Text finder	MacWarehouse	£39
Grappler Spooler	Orange Micro	Flexible printing	Principal	£59
HandOff II	Connectix	Quick file launcher	Computers Unlimited	£80
Hard Disk Toolkit P.E. ✪✪✪	FWB	✱ Hard disk utilities	Midwich Thame	£149
Help! v.1.0	Technosys	System troubleshooter	Softline	£99
HyperDA	Symmetry Software		Merisel	£95
Icon 7 ✪✪✪	Inline Design	Creates, catalogues and organizes icons	MacWarehouse	£50
IdeaFisher v.2.0 ✪✪✪	Fisher Idea Associates	Brainstorming toolkit	AMG	£399
I Like Icon ✪✪✪	Baseline Publishing	Creates, catalogues and organizes icons	MacLine	£35
INITPicker	Microseeds Publishing	INIT manager	Softline	£39
Installer Pro v.1.0	Symantec	Software distribution utility	Symantec	£199
Kaboom! v.2.0	Nova Software	Sound Utility, available on CD	Amtech	£38
Label Designer	Computalabel	Labelling & barcoding program	Computalabel	£195
Label Designer Export	Computalabel	As above with exportable EPS bar codes	Computalabel	POA
Last Resort	Working Software	Puts keystrokes in text files in Sys. Folder	Innovation Software	£45
LapLink Mac III	Traveling Software	Mac-PC file transfer	Merisel	£110
Mac—Bac ✪✪✪✪	Hi Resolution	✱ Back-up for System 7	Hi Resolution	from £59
MacBarcoda	Computalabel	Bar code generator	Computalabel	£445
Mac-in-Dos Plus		Read/Write Mac-PC data	Riva	£120
MacintoshPC Exchange ✪✪✪	Apple	Read, write, format PC disks	Apple	£50
MacLinkPlus/PC v.7.02	DataViz	Mac-PC file transfer/translation	Key Exchange; Principal	from £129
M.L.Plus/Translators Pro v.7.5 ✪✪✪✪	DataViz	Network translators for above	Key Exchange; Principal	£129
MacMainFrame Coax Gateway	Avatar		Gomark	£2,090
MacPrefect v.2.2	Hi Resolution	✱ Educational software for administrators	Hi Resolution	from £35
MacThermal	Computalabel	Thermal label-printing	Computalabel	£895
MacTools v.3.0 ✪✪✪✪	Central Point Software	✱ Disk management/back-up	Principal	£99
Marco Polo v.2.0 ✪✪✪✪	Mainstay	Text/graphics storage and retrieval	Computers Unlimited	£399
Marvel Screen Posters ✪✪	Berkley Systems	Screen saver utility	Softline	£25
Maxima v.2.0	Connectix	Extends RAM access	Computers Unlimited	£100
MenuFonts	Dubl-Click	Utility pack	MacWarehouse	£60
MockPackage Plus v.4.4	CE Software		Computers Unlimited	£45
More Disk Space ✪✪	Alysis Software	Automatic file compression	AM Micro	£74
More After Dark	Berkeley Systems	Screen saver modules for After Dark	Softline	£25
More Kaboom!	Nova Devleopment	More sounds for Kaboom	Amtech International	£30
NightShift	Transitional Technologies	Back-up	Principal	£595
NightWatch II	Kent Marsh	HD security	Ingram Micro	£95
Norton Essentials v.1.1	Symantec	Disk management for PowerBook	Frontline; Merisel, Princ.	£89
Norton Utilities ✪✪✪✪	Symantec	Disk management	Frontline; Merisel, Princ.	£109
Now Compress ✪✪✪✪	Now Software	File compression	Frontline	£69
Now Fun ✪✪✪	Now Software	Desktop enhancement	Frontline	£49
Now Utilities v.4.0.1 ✪✪✪✪	Now Software	Utility pack	Frontline	£89
On Cue II	Viacom New Media	Fast launching utility	MacLine	£49
On Location v.2.0.1	ON Technology	Text retrieval package	ESP	£99
Optima	Connectix		Computers Unlimited	£200
Password	AccessData	Data recovery	Key Exchange	from £159
Peace of Mind v.2.0	DiagSoft	Hardware diagnostic tool	Amtech	£85
PKZip	Atlantic Coast	Data compression	Atlantic Coast	£199

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PowerBook Utilities	Connectix	Integrated software utilities for PBs	Computers Unlimited	£80
PowerMenus	Magic Software		Softline	£55
Power To Go ✪✪✪	Claris	Optimises battery use on PowerBook	Claris	£25
Powerprint/NW	GDT Softworks	Mac access to PC printer	Academy Software	£375
PowerUtilities	Alsoft	Utility pack	Softline	£89
QuicKeys v.3.0 ✪✪✪✪	CE Software	Macro generator	MacLine	£135
Raid Warrior Kit	Warrior	Provides protection from disk failure	MacEurope	from £595
RAM Doubler ✪✪✪✪	Connectix	Memory manager	Computer Unlimited	£70
RapidCD	Insignia Software	CD-Rom drive utility	Insignia Software	£50
Retrieve It! v.1.0	Claris	Text retrieval package	Frontline	£25
Retrospect v.2.0	Dantz Development	✱ Back-up	Key Exchange; Principal	£169
RunShare	RunWay	Network accelerator	Simms International	from £299 two-users
Safe & Sound	Central Point Software	Disk utility	Principal	£49
SafeDeposit v.1.3	Dayna	Network backup	Computers Unlimited	£100
SAM v.3.5.8 ✪✪✪✪	Symantec	Anti-virus	Merisel; Frontline; Principal	£79
Screenshot	Preferred	Screen grabber	Softline	£40
SCSI Director Pro	Transoft	Hard-disk utility	MacEurope	£TBA
SCSI-NET	Transoft	Connects to server h.drive for file transfer	MacEurope	£7,395
ShortCut	Aladdin Systems	Finder utility	Merisel; Principal	£55
Silverlining v.5.4 ✪✪✪	La Cie	Hard drive management	Principal	£125
Snapback	Golden Triangle	Back up	DirekTek	£269
Snooper v.2.0 ✪✪✪	Maxa	Diagnostic utilities	Softline; Ingram; Frontline	from £149
Sonar Professional v.8.4	Virginia Systems	Text retrieval package	PPS	approx. £595
SPECtacular	Omega Systems	Font spec sheet utility	AM Micro	£74
Spectator ✪✪✪✪	Baseline Publishing	Saves screen sequences	Softline	£99
Spot CD	MacPeak	CD driver, Photo, audio,data CD suppport	MacPeak	£49
Spot ON	MacPeak	Formatter and driver software	MacPeak	£69
Square One	Binary Software	Fast launching utility	MacLine	£32
Stacker	Stac Electronics	Presentations program	Stac Electronics	£79
Star Trek ✪✪✪	Berkeley Systems	Screen saver	Softline	£39
StuffIt Deluxe v.2.0	Aladdin Systems	File compression	Merisel; Principal; Ingram	£65
Super 7	Atticus Software	Collection of 3 utilities	DirekTek	£69
SuperDisk!	Alysis Software	File compression	AM Micro	£69
SuperDoubler v.1.0	Symantec	File compression + Auto/Disk/CopyDoubler	Principal;Riva;Ingram;Amtech	£89
SurfGuard ✪✪✪	Surf City	Archive utility	Interface	£99
Tempo II Plus v.3.0.9 ✪✪✪	Affinity Microsystems	Macro generator	MacWarehouse	£99
The Far Side	Delrina	Animated screen savers and security	Delrina	£29
Toner Tuner	Working Software	Printer utility; can reduce toner/ink used	Innovation Software	£35
Type Reunion	Adobe Systems	Font organizer	Principal; Fontworks	£55
UnderWare v.1.0.1 ✪✪✪	Bit Jugglers	(7/94) Screen enhancer; see Bundle of Util.	MacWarehouse; MacLine	£22
Virex v.5.0 ✪✪✪✪ MW	Datawatch	(5/94) Virus detection and repair	Softline	£70
Wallpaper ✪✪	I Thought I Could	Desktop pattern creatoe	Softline	£39
Warp Speed	Image Technologies	Printer Driver/Controller	Image Technologies	£10,000
Wiz Tools	Highware	System 7 utilities	Softline	£69
Wiz Tools for PowerBook	Highware	System 7 utilities for PowerBook	Softline	£69
Working Watermarker	Working Software	Watermark maker for printed documents	Innovation Software	£45
WorkROOM	Educorp	Shareware; CD	Kimtec	£32

WORD PROCESSING

See Macworld November 93 for word-processing tips

Ambassador	Advanced Computers	Bilingual document system	Advanced Computers	£345
Correct Grammar	Wordstar	Grammar checker	Merisel	£89
Correct Quotes ✪✪	Wordstar	Quotation collection	Merisel	£495
Fair Witness v.1.2.1	Chena Software		MacWarehouse	£190
Grammatik Mac	Reference Software	Grammar checker	Merisel; Riva Ltd	£89
Inside Information	Microlytics	Thesaurus	Merisel	£85
Intellitalk	KCS	Word processor with speech facility	KCS	£49
LetterPerfect v.2.1 ✪✪✪	WordPerfect	(5/93) Low-end word processor	Principal	£99
Letter Writer Plus	Power Up Software	Letter writing DA	Axiom	£75
Mavis Beacon Teaches Typing	Software Toolworks	Typing tutor	Softline	£60
MacWrite Pro v.1.5 ✪✪✪✪	Claris	(5/94) WP with page layout	Frontline	£175
MarkUp	Mainstay	Workgroup editor	Computers Unlimited	£159
Nisus v.4.0	Nisus	WP with page layout	Softline	£299
Nisus Compact	Nisus	Middleweight version of above	Softline	£99
Oxford English Dictionary 2 ✪✪✪✪	Oxford University Press	(11/93) OED2 on compact disc	Principal	£495

PRODUCT	PUBLISHER/MAKER	NOTES	DISTRIBUTOR	PRICE
QUED/M	Paragon Concepts	Text editor	Softline	£89
Science Shelf	Oxford University Press	Science reference package	OUP	£99
Spellswell v.7.0.3	Working Software		Innovation Software	£85
Taste v.1.02	DeltaPoint	WP with page layout, mail merge	Frontline	£112
Thesaurus	Oxford University Press		OUP	£99
Thunder 7 v.1.5.4 ❍❍❍❍	Baseline Publishing	(11/93) Spell checker and thesaurus	Soft.; Front.; CU; Ingram	£75
Vantage v1.1	Preferred	Text management DA	Softline	£65
Word v.6.0	Microsoft	✱ WP with page layout	Principal	£159
Word for Word Macintosh	Mastersoft	WP file translation utility	Key Exchange	£119
WordPerfect v.3.0 ❍❍❍❍	WordPerfect	✱ (1/94) WP with page layout	Principal	£329
WriteNow v.4.0	SoftKey	(6/94) Middleweight WP	SoftKey	£50

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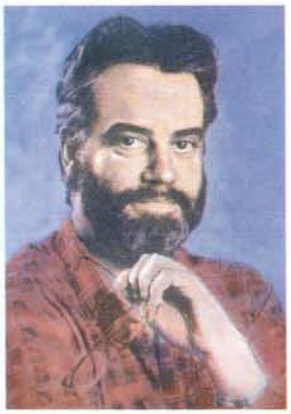
Commentary

Hope springs eternal as a new year approaches

Dear Santa,

My six-year-old son recently accused me of pretending to be you. "You just wait until I'm asleep on Christmas Eve," he said, "then you dress up in a red suit and white beard and put out the presents." Since I could honestly assure him that I had never worn a red suit nor a white beard, it stands to reason that you must exist.

Therefore, I take word processor in hand to write to you for the first time in many years. (I'm sure you don't remember the last time, and if you do I'd like you to know that I don't hold against you your inability to deliver the Man From Uncle spy kit, or the Johnny Seven assault rifle the year before that, or even the racing bike with drop handlebars. Some years in the computer industry have taught me a thing or two about delivery dates.)



PETER WORLOCK

But to turn to the matter at hand. If you could manage any of the following items – at any time during 1995 – I'd be very grateful.

First, and definitely not least, could you have a word with the memory elves. I think you will be disconcerted to find evidence of an appalling price-fixing cartel in operation. Far be it from me to tell you how to run a global manufacturing operation – let me just point out that two years ago I could buy a megabyte of memory for around £25, and while Mac prices have plummeted, printer prices have been slashed and hard disk prices are through the floor, the price of a 1MB SIMM today has risen to more than £30. Something stinks, Santa, and it isn't the reindeer stable.

Second, perhaps you might have a stern word with the elves in the operating system department? I know that you – with help from Apple – have done a great job with the Mac OS. I know that you are only Santa Claus and not God Almighty and, therefore, asking for a crash-free operating system is pointless. But might we, possibly, get some sensible error messages in System 8, rather than the surreal gibberish System 7 offers? (Would it be snide of me to point out that I know when an application has "unexpectedly" quit – and if I expect it, I'd save the file just before it happens?)

Third – and I'll pass over this one quickly because I know you've heard me rant about this many times – could we have a few more CD products that aren't just 500K of entertainment and 600 megabytes of pointless, patronising "live" video footage of out-of-work actors and really dodgy digitized music?

Fourth, is it beyond the realms of possibility that somebody, somewhere, could offer a communications system, or a modem, or a piece of comms software that is as easy-to-use and as useful as, say, the average video recorder? (I know the average video recorder is not at all easy-to-use, but it's a goal to aim for.)

Fifth... but I realise I'm getting greedy now, so I'll deal with these in a bundle. Could you arrange for: one of your top elves to explain why I should care about object-oriented operating systems; remind me exactly what it is that Kaleida is supposed to be doing; for Taligent to announce a product, or even a technology; and for absolutely anybody at all anywhere in the world to license the Mac OS.

Finally, I'd like to wish you and Mrs Claus a happy New Year, and I hope the reindeer are well. And if you'd like something for yourself – something to help with the logistics of your global operation – might I suggest a colour PowerBook? Still a bit on the heavy side for portable computing, I know, but I can't, in all conscience, recommend a Newton.

But now that I mention it, perhaps you could get the elves busy on a MessagePad that actually does what it's supposed to. And if you could do anything about getting wireless networking up and running in the UK, there's a lot of people would appreciate that. Oh, and another thing...

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Art Director Mandie Johnson
Production Editor Vic Lennard
Staff Writer Mary Cowan
Editorial Assistant Gerard Locke
US Editor Adrian Mello

Advertising Manager Guy Eaton
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Sales Executives Ivan Corless, Samantha Hunt, Paul Williamson
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Next Month in Macworld

Ready For Power Mac?: It's nearly a year since the launch of the first Power Macs: time to take stock and ask – if you haven't already made the leap – whether the time is right to upgrade to PowerPC. Macworld Lab has the answers.

Digital Image: When it comes to image editing and creative manipulation, Adobe Photoshop has long been king of the hill. But 1994 saw the emergence of new challengers – do they have what it takes to usurp the throne?

Plus: We know CD drive owners prefer CDs, while those without prefer HD disks. Well, next month we'll have something for everyone with two versions of the magazine on sale. Look out for separate CD and HD versions from January 25.

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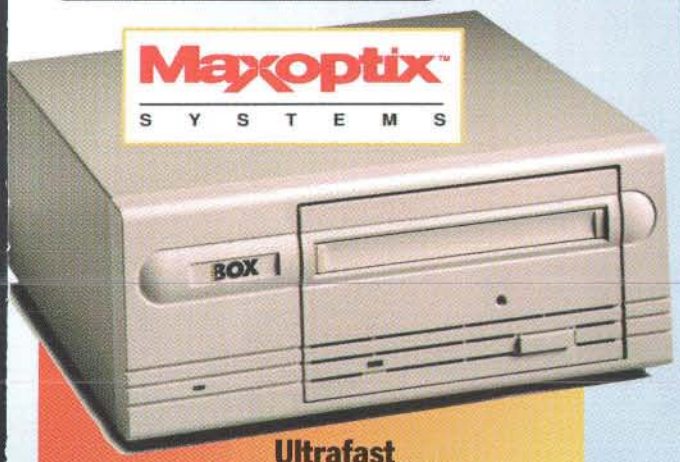
Hard Drives



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